

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
 Department for Environmental Protection  
 Division of Water

**401 KAR 5:002. Definitions for 401 KAR Chapter 5.**

RELATES TO: KRS 224.01-010, 224.01-400, 224.10-100, 224.10-110, 224.16-050, 224.16-060, 224.40, 224.43, 224.46, 224.50, 224.60, 224.70, 224.71, 224.73, 40 C.F.R. Parts 35, 116, 130, 131, 136, 401 - 471, 33 U.S.C. 1281, 1288, 1313(e), 1314(b), 1341, 1342, 42 U.S.C. 300f - j, 42 U.S.C. 9601 - 9675

STATUTORY AUTHORITY: KRS 224.10-100, 224.10-110, 224.16-060, 224.70-100, 224.70-110, 224A.111, 224A.112, 224A.113, 40 C.F.R. Parts 116, 130, 131, 136, 401 - 471, 33 U.S.C. 1281, 1288, 1313(e), 1314(b), 1341, 1342

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 authorizes the Natural Resources and Environmental Protection Cabinet to promulgate administrative regulations for the prevention, abatement, and control of all water pollution. This administrative regulation and 401 KAR 5:026, 5:029, 5:030, and 5:031 establish procedures to protect the surface waters of the Commonwealth, and thus protect water resources. 401 KAR Chapter 5 establishes administrative regulations for the issuance of permits to construct, modify, and operate facilities which discharge pollutants to waters of the Commonwealth. This administrative regulation establishes definitions for terms and acronyms, abbreviations, and symbols used in 401 KAR Chapter 5, relating to the issuance of those permits. Where applicable, these definitions are the same as definitions used for the federal National Pollutant Discharge Elimination System program in 40 C.F.R. Parts 116, 136, 401 - 471, and the planning requirements in 40 C.F.R. Part 130; there are no definitions that are more stringent than federal requirements.

**Section 1. Definitions.**

- (1) "Act" means the Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. 1251, et seq.
- (2) "Activity" means, for purposes of 401 KAR 5:050 to 5:080 and when used in conjunction with facility, any KPDES point source, or any other activity, including land or appurtenances thereto, that is subject to regulation under the KPDES program.
- (3) "Acute-chronic ratio" means the ratio of the acute toxicity, expressed as an  $LC_{50}$ , of an effluent or a toxic substance, to its chronic toxicity. It is used as a factor to estimate chronic toxicity from acute toxicity data.
- (4) "Acute criteria" means the highest instream concentration of a toxic substance or an effluent to which an organism can be exposed for a brief period of time without causing an unacceptable harmful effect.
- (5) "Acute toxicity" means lethality or other harmful effect sustained by either an indigenous aquatic organism or a representative indicator organism used in a toxicity test, due to a short-term

exposure, of ninety-six (96) hours or less, to a specific toxic substance or mixture of toxic substances.

(6) "Acute toxicity unit" means the reciprocal of the effluent dilution that causes the acute effect, or  $LC_{50}$ , by the end of the acute exposure period.

(7) "Administrator" means the administrator of the United States Environmental Protection Agency, or the administrator's authorized representative.

(8) "Adversely affect" or "adversely change" means, for purposes of 401 KAR 5:026 through 5:031, to alter or change the community structure or function, to reduce the number or proportion of sensitive species, or to increase the number or proportion of pollution tolerant aquatic species so that aquatic life use support or aquatic habitat is impaired.

(9) "Agricultural wastes handling system" means a no-discharge structure or equipment that conveys, stores, or treats manure from an animal feeding operation prior to land application, but does not include a swine feeding operation.

(10) "Alternative effluent limitations" means all effluent limitations or standards of performance for the control of the thermal component of any discharge which are established under 401 KAR 5:055.

(11) "Animal feeding operation" means, for purposes of 401 KAR 5:005 and 5:050 to 5:080, a lot or facility, other than an aquatic animal production facility, where the following conditions are met:

(a) 1. Animals other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for a total of forty-five (45) days or more in any twelve (12) month period; and

2. Crops, vegetation forage growth, or postharvest residues are not sustained in the normal growing season over any portion of the lot or facility.

(b) Two (2) or more animal feeding operations under common ownership are considered to be a single animal feeding operation if they adjoin each other or if they use a common area or system for the disposal of wastes.

(12) "Animal unit" means, for purposes of 401 KAR 5:005 and 5:050 to 5:080, the unit of measurement for any animal feeding operation, calculated according to the following equation:

$$\text{Animal Unit} = (N_1 \times 1.0) + (N_2 \times 1.4) + (N_3 \times 0.4) + (N_4 \times 0.1) + (N_5 \times 2.0)$$

Where:

$N_1$  = Number of slaughter and feeder cattle;

$N_2$  = Number of mature dairy cattle;

$N_3$  = Number of swine weighing over twenty-five (25) kg;

$N_4$  = Number of sheep; and

$N_5$  = Number of horses.

(13) "Applicable standards and limitations" means all standards and limitations to which a discharge or a related activity is subject under KRS Chapter 224, and administrative regulations promulgated pursuant thereto, including effluent limitations, water quality standards, standards of performance, and toxic effluent standards.

(14) "Application" means the document submitted by an applicant to the cabinet which provides information used by the cabinet in the issuance of a permit or approval. The application may have several different forms, depending on the type of permit which is requested. The specific forms are required in the applicable administrative regulation.

(15) "Approved POTW pretreatment program", "POTW pretreatment program", "pretreatment program", or "program" means a program administered by a POTW that meets the criteria

established in 401 KAR 5:057 and which has been approved by the cabinet.

(16) "Aquaculture project" means a defined managed water area which uses discharges of pollutants into that designated area for the maintenance or production of harvestable freshwater plants and animals.

(17) "Area of review" means a fixed radius around a facility of not less than one-fourth (1/4) mile.

(18) "Arithmetic mean for seven (7) consecutive days" means the average of a minimum of two (2) samples taken on separate days in a seven (7) day period.

(19) "Arithmetic mean for thirty (30) consecutive days" means the average of a minimum of three (3) samples collected in separate calendar weeks during a period of thirty (30) consecutive days with a minimum of twenty (20) days occurring between the first and last sample days.

(20) "Association of Boards of Certification" or "ABC" means that organization which serves as an information center for certification activities, recommends minimum standards and guidelines for classification of water supply and wastewater systems, and assists authorities in establishing new certification programs and upgrading existing programs.

(21) "Available" means located within the planning area and:

(a) Located within one and zero-tenths (1.0) mile of a regional facility for WWTPs with an average daily design capacity larger than 1,000 gpd. The distance shall be measured along the most feasible route of connection to a point where the downstream sewer has capacity to carry the additional flow; or

(b) For new construction if the distance is one and zero-tenths (1.0) mile or more, where it is cost-effective to connect as determined by a twenty (20) year present worth cost analysis.

(22) "Average monthly discharge limitation" means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

(23) "Average weekly discharge limitation" means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

(24) "Balanced indigenous community" means a biotic community typically characterized by diversity, the capacity to sustain itself through cyclic seasonal changes, presence of necessary food chain species, and a lack of domination by pollution tolerant species. The community may include historically nonnative species introduced in connection with a program of wildlife management and species whose presence or abundance results from substantial, irreversible environmental modification. Normally, however, such a community does not include species whose presence or abundance is attributable to the introduction of pollutants that will be eliminated by compliance of all sources with 401 KAR 5:065, and may not include species whose presence or abundance is attributable to alternative effluent limitations imposed pursuant to 401 KAR 5:055.

(25) "Barrel" means forty-two (42) U.S. gallons.

(26) "BAT" means best available technology economically achievable.

(27) "BCT" means best conventional pollutant control technology.

(28) "Best management practices" or "BMPs" means, for purposes other than agriculture operations, schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the Commonwealth. BMPs also include treatment requirements, operating procedures, practices to control site run-off, pollution of surface water and groundwater from nonpoint sources, spillage or leaks, sludge or

waste disposal, or drainage from raw material storage.

(29) "Biochemical oxygen demand", "BOD", or "BOD<sub>5</sub>" means the amount of oxygen required to stabilize biodegradable organic matter under aerobic conditions within a five (5) day period. Other time periods may be measured, and if so, are indicated where the term is used.

(30) "BMPs" means best management practices.

(31) "Board" means the Kentucky Board of Certification of Wastewater System Operators, as established by KRS 224.73-110.

(32) "BOD" or "BOD<sub>5</sub>" means biochemical oxygen demand.

(33) "BPT" means best practicable technology currently available.

(34) "Building drain" means that part of the lowest piping of the drainage system which receives the discharge from plumbing fixtures and other interior drainage pipes and conveys its discharge to the building sewer which begins two (2) feet outside the building wall.

(35) "Building sewer" means that part of the drainage system which extends from the end of the building drain, beginning two (2) feet outside the building wall, and conveys its discharge to a downstream manhole, sewer line, pump station, or sewage disposal system.

(36) "Bypass" means the intentional diversion of sewage or wastestreams from a portion of a facility or industrial user's treatment facility.

(37) "°C" means degrees Celsius.

(38) "CAH" means cold water aquatic habitat.

(39) "Carbonaceous biochemical oxygen demand" or "CBOD" means BOD, not including the nitrogenous oxygen demand of the wastewater.

(40) "Cation exchange capacity" or "CEC" means the measure of the ability of a soil to retain cations in a form available for uptake by plants. CEC is expressed in milliequivalents per 100 grams of soil.

(41) "CBOD" means carbonaceous biochemical oxygen demand.

(42) "CEC" means cation exchange capacity.

(43) "CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act, as amended at 42 U.S.C. 9601 et seq..

(44) "Certificate" means the certificate of competency issued by the secretary or the secretary's designated agent stating that the operator has met the requirements for the specified operator classification as set by 401 KAR 5:010.

(45) "Certified operator" means a wastewater operator employed at a wastewater system who has primary responsibility for the system or a portion thereof which may affect the performance of the system and who holds a certificate of competency meeting the requirements of 401 KAR 5:010.

(46) "cfm" means cubic feet per minute.

(47) "C.F.R." means Code of Federal Regulations.

(48) "Chronic criteria" means the highest instream concentration of a toxic substance or an effluent to which organisms can be exposed indefinitely without causing an unacceptable harmful effect.

(49) "Chronic toxicity" means lethality, reduced growth or reproduction or other harmful effect sustained by either indigenous aquatic organisms or representative indicator organisms used in toxicity tests due to long-term exposures, relative to the life span of the organisms or a significant portion of their life span, to toxic substances or mixtures of toxic substances.

(50) "Chronic toxicity unit" means the reciprocal of the effluent dilution that causes twenty-five (25) percent inhibition of growth or reproduction to the test organisms by the end of the

chronic exposure period.

(51) "Clean Water Act" or "CWA" means the Clean Water Act as subsequently amended (33 U.S.C. Section 1251 et seq.), otherwise known as the Federal Water Pollution Control Act.

(52) "Coal remining operation" means a surface coal mining operation which begins after July 11, 1990, at a site on which a coal mining operation was conducted before August 3, 1977. It also means a surface coal mining operation existing on July 11, 1990, which receives a permit revision from the Department for Surface Mining Reclamation and Enforcement (DSMRE) in accordance with 405 KAR 8:010, Section 20 for a site on which a coal mining operation was conducted before August 3, 1977.

(53) "COD" means chemical oxygen demand.

(54) "Cold water aquatic habitat" or "CAH" means surface waters and associated substrate that will support indigenous aquatic life or self-sustaining or reproducing trout populations on a year-round basis.

(55) "Combined sewer" or "combined sewer line" means a sewer or sewer line designed to carry storm water runoff as well as sanitary wastewater.

(56) "Combined sewer overflow" or "CSO" means the flow from a combined sewer in excess of the interceptor or regulator capacity that is discharged into a receiving water without going to a POTW.

(57) "Composite sample" means:

(a) Not less than four (4) effluent portions collected at regular intervals over a period of eight (8) hours and combined in proportion to flow;

(b) Not less than four (4) combined equal volume effluent portions collected over a period of eight (8) hours at intervals proportional to flow;

(c) An effluent portion collected continuously over a period of twenty-four (24) hours at a rate proportional to the flow; or

(d) An effluent portion consisting of a minimum of four (4) combined equal volume grab samples taken approximately two (2) hours apart.

(58) "Concentrated animal feeding operation" means, for purposes of 401 KAR 5:005, 5:009, and 5:050 to 5:080, an animal feeding operation where:

(a) More than the following numbers of indicated animals are confined:

1. 1,000 slaughter and feeder cattle;

2. 700 mature dairy cattle, whether milked or dry cows;

3. 2,500 swine each weighing over twenty-five (25) kilograms (approximately fifty-five (55) pounds);

4. 500 horses;

5. 10,000 sheep or lambs;

6. 55,000 turkeys;

7. 100,000 laying hens or broilers if the facility has continuous overflow watering;

8. 30,000 laying hens or broilers if the facility has a liquid manure system;

9. 5,000 ducks; or

10. 1,000 animal units; or

(b)1. More than the following number and types of animals are confined:

a. 300 slaughter or feeder cattle;

b. 200 mature dairy cattle, whether milked or dry cows;

c. 750 swine each weighing over twenty-five (25) kilograms (approximately fifty-five (55) pounds).

pounds);

- d. 150 horses;
- e. 3,000 sheep or lambs;
- f. 16,500 turkeys;
- g. 30,000 laying hens or broilers if the facility has continuous overflow watering;
- h. 9,000 laying hens or broilers if the facility has a liquid manure system;
- i. 1,500 ducks; or
- j. 300 animal units; and

2. Either pollutants are discharged into navigable waters through a manmade ditch, flushing system or other similar manmade device; or pollutants are discharged directly into waters of the Commonwealth which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

(c) If an animal feeding operation discharges only during a twenty-five (25) year, twenty-four (24) hour storm event or greater, the animal feeding operation shall not be considered to be a concentrated animal feeding operation.

(59) "Concentrated aquatic animal production facility" means a hatchery, fish farm, or other facility which meets the criteria in 401 KAR 5:060 or which the cabinet designates under 401 KAR 5:060.

(60) "Consolidation sewer" means a conduit, without direct sanitary connections, which intercepts and transports combined sewer storm overflows to a treatment facility or a single combined sewer overflow point.

(61) "Continuous discharge" means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

(62) "Control authority" means the POTW if the POTW has an approved pretreatment program or the cabinet if the POTW does not have an approved pretreatment program.

(63) "Conventional domestic water supply treatment" means or includes coagulation, sedimentation, filtration, and chlorination.

(64) "Conventional pollutant" means biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), total suspended solids (TSS), ammonia (as N), bromide, chlorine (total residual), color, fecal coliform, fluoride, nitrate, kjeldahl nitrogen, oil and grease, and phosphorus.

(65) "Copermittee" means a permittee to a KPDES permit that is only responsible for the permit conditions relating to the discharge for which it is the operator.

(66) "Criteria" means specific concentrations or ranges of values, or narrative statements of water constituents which represent a quality of water expected to result in an aquatic ecosystem protective of designated uses of surface waters. Criteria are derived to protect legitimate uses such as aquatic life, domestic water supply, and recreation and to protect human health.

(67) "CSO" means combined sewer overflow.

(68) "CWA" means the Clean Water Act, as amended.

(69) "Daily discharge" means the discharge of a pollutant measured during a calendar day or any twenty-four (24) hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average

measurement of the pollutant over the day.

(70) "Date of program approval" means September 30, 1983, the effective date of the administrator's approval of Kentucky's KPDES regulatory program under CWA Section 402 (33 U.S.C. Section 1342).

(71) "Day" means a twenty-four (24) hour period.

(72) "Designated project area" means the portions of the waters of the Commonwealth within which the permittee or permit applicant plans to confine the cultivated species, using a method or plan of operation, including, but not limited to, physical confinement, which, on the basis of reliable scientific evidence, is expected to ensure that specific individual organisms comprising an aquaculture crop will enjoy increased growth attributable to the discharge of pollutants, and be harvested within a defined geographic area.

(73) "Direct discharge" means the discharge of a pollutant into waters of the Commonwealth if the discharge is not included under the definition of indirect discharger, but does not include a discharge of animal waste onto land by land application if the discharge does not reach the waters of the Commonwealth.

(74) "Discharge" or "discharge of a pollutant" means any addition of any pollutant or combination of pollutants to waters of the Commonwealth from any point source. This definition includes, but is not limited to, additions of pollutants into waters of the Commonwealth from surface run-off which is collected or channelled by human effort; discharges through pipes, sewers or other conveyances whether publicly or privately owned which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

(75) "Discharge monitoring report" or "DMR" means the report including any subsequent additions, revisions, or modifications, for the reporting of self-monitoring results by KPDES permittees.

(76) "Disappearing stream" means an intermittent or perennial surface stream that terminates and drains underground through caves, fractures, or swallets in the stream bed.

(77) "Disposal well" means a borehole drilled or proposed to be drilled, or a well converted to be used, for the sole purpose of disposing of any water, gas, produced water, or other fluid by injection or other method into a subsurface zone.

(78) "Division" means the Kentucky Division of Water, within the Department for Environmental Protection, Natural Resources and Environmental Protection Cabinet.

(79) "DMR" means discharge monitoring report.

(80) "Domestic" means relating to household wastes or other similar wastes. It is used to distinguish municipal, household, or commercial water or wastewater services from industrial water or wastewater services.

(81) "Domestic sewage" means sewage devoid of industrial or other wastes and which is typical of waste received from residential facilities. It may include wastes from commercial developments, schools, restaurants, and other similar developments.

(82) "Domestic water supply" or "DWS" means surface waters that with conventional treatment are suitable for human consumption through a public water system as defined in 401 KAR 8:010, culinary purposes, or for use in any food or beverage processing industry; and meet state and federal regulations under the Safe Drinking Water Act, as amended, 42 U.S.C. 300f - 300j.

(83) "Draft permit" means a document prepared under 401 KAR 5:009 or 5:075 indicating the

cabinet's preliminary decision to issue or deny, modify, revoke and reissue, revoke, or reissue a permit. It includes a notice of intent to revoke a permit and a notice of intent to deny a permit as provided in 401 KAR 5:009 or 5:075. It does not include a proposed permit; a denial of a request for modification, revocation, and reissuance; or a denial of a request for revocation.

(84) "Drilling pit" means an earthen excavation for the collection of fluids associated with the drilling, construction, completion, acidizing, or fracturing of an oil or gas well.

(85) "Dry gas well" means a gas well producing one (1) barrel or less of produced water at maximum production conditions during a given twenty-four (24) hour period.

(86) "DWS" means domestic water supply.

(87) "Effluent ditch" means that portion of a treatment system which is a discrete, person-made conveyance, either totally owned, leased or under valid easement by the discharger, which transports a discharge to surface waters of the Commonwealth.

(88) "Effluent lagoon" means a treatment lagoon.

(89) "Effluent limitation" is defined at KRS 224.01-010(12).

(90) "Effluent limitations guideline" means a federal regulation published by the administrator under CWA Section 304(b) (33 U.S.C. Section 1314(b)) to adopt or revise technology-based effluent limitations.

(91) "Engineer" means a professional engineer.

(92) "Enhanced recovery well" means a well used for the injection of fluids to improve or maintain reservoir productivity.

(93) "Environmental Protection Agency" or "EPA" means the United States Environmental Protection Agency.

(94) "Epilimnion" means the thermally homogeneous water layer overlying the metalimnion of a thermally stratified lake or reservoir.

(95) "Establishment" means a manufacturing or industrial works or facility in the operation of which sewage, industrial wastes, or other wastes are generated or stored including but not limited to an industrial plant, mill, factory, tannery, paper or pulp mill, mine or mineral processing or producing facility, quarry, or oil refinery.

(96) "Eutrophication" means the enrichment of a surface water by the discharge or addition of a nutrient.

(97) "Exceptional water" means a surface water categorized as exceptional by the cabinet pursuant to 401 KAR 5:030.

(98) "Excessive infiltration" means a high groundwater period induced peak infiltration rate which results in operational problems and permit violations at the WWTP or results in recurring overflows from the sewer system or the WWTP. It does not include overflows which result from blockages, power failures or other temporary mechanical failures, or flood waters entering the sewer system directly. For combined sewer systems, infiltration shall not be considered to be excessive if an overflow occurs at a KPDES permitted overflow point that is in compliance with its permit requirements.

(99) "Excessive inflow" means a rainfall induced peak inflow rate which results in operational problems and permit violations at the WWTP or results in recurring overflows from the sewer system or the WWTP. For combined sewer systems, inflow shall not be considered to be excessive if an overflow occurs at a KPDES permitted overflow point that is in compliance with its permit requirements. It does not include overflows which result from blockages, power failures or other temporary mechanical failures, or flood waters entering the sewer system directly.

(100) "Existing source" means, for purposes of 401 KAR 5:080, any source which is not a new source or a new discharger.

(101) "Existing use" means a legitimate use being attained in or on a surface water of the Commonwealth on or after November 28, 1975, irrespective of its use designation.

(102) "Expanded discharge" means an increase in pollutant loading of twenty (20) percent or greater.

(103) "°F" means degrees Fahrenheit.

(104) "Facility" means:

(a) For purposes of 401 KAR 5:005, 5:006, or 5:009, a sewage system as defined in KRS 224.01-010 except for septic tanks, pretreatment facilities regulated by an approved pretreatment program or intermunicipal agreement, and disposal wells as used in 401 KAR 5:090;

(b) For purposes of 401 KAR 5:050 to 5:080 and when used in conjunction with activity, any KPDES point source, or any other facility, including land or appurtenances thereto, that is subject to regulation under the KPDES program; or

(c) For purposes of 401 KAR 5:090, any well, tank, pit, structure, appurtenance or improvement used in the exploration, drilling, or production of oil or gas or used for treating, storing, or disposing of produced water.

(105) "Facilities or equipment" means buildings, structures, process or production equipment, or machinery which form a permanent part of the new source and which will be used in its operation, if these facilities or equipment are of such value as to represent a substantial commitment to construct. It excludes facilities or equipment used in connection with feasibility, engineering, and design studies regarding the source or water pollution treatment for the source.

(106) "Fecal coliform" means the portion of the coliform group of bacteria which are present in the intestinal tract or the feces of warm-blooded animals. It generally includes organisms which are capable of producing gas from lactose broth in a suitable culture medium within twenty-four (24) hours at forty-four and five-tenths (44.5) degrees plus or minus two-tenths (0.2) degrees C.

(107) "Filter strip" means a strip or area of vegetation for removing sediment, organic material, and other pollutants from runoff and wastewater.

(108) "Flood relief sewer" means a conduit, without direct sanitary connections, that is used to transport sewage when a flood control structure or overflow detention basin is in operation.

(109) "Force main" means a conduit used to transport sewage from a pump discharge to a sewer line, pump station, or WWTP.

(110) "Gas" means, for purposes of 401 KAR 5:090, all natural gas, including casinghead gas, and all other hydrocarbons not defined as oil.

(111) "General permit" means any KPDES permit authorizing a category of discharges under KRS Chapter 224 within a geographical area, issued under 401 KAR 5:055.

(112) "Geologically isolated" means a zone separated from drinking water aquifers and free of known open faults or fractures and free of any unprotected wells within the area of review.

(113) "GPD" or "gpd" means gallons per day.

(114) "Grab sample" means:

(a) For purposes of 401 KAR 5:045, a single instantaneous portion of the effluent; or

(b) For purposes of 401 KAR 5:050 to 5:080, a single effluent portion which is not a twenty-four (24) hour composite sample.

(115) "Groundwater" means the subsurface water occurring in the zone of saturation beneath the water table and perched water zones below the B soil horizon including water circulating

through fractures, bedding planes, and solution conduits.

(116) "Harmonic mean flow" means the reciprocal of the mean of the reciprocal daily flow values.

(117) "Hazardous substance" means, for purposes of 401 KAR 5:050 to 5:080, any pollutant designated under 40 C.F.R. Part 116.

(118) "Holding pit" means an earthen excavated depression which receives and stores produced water at a facility.

(119) "Hydraulic gradient" means the vertical distance measured from the surface of the swine waste in the lagoon, one (1) foot below the spillway, to the bottom of the liner, divided by the thickness of the liner.

(120) "Hypolimnion" means the lower cold region of a thermally stratified lake or reservoir that extends below the metalimnion to the bottom.

(121) "IC<sub>25</sub>" means an inhibition concentration of twenty-five (25) percent.

(122) "Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a KPDES permit, other than the KPDES permit for discharges from the municipal separate storm sewer, and discharges resulting from fire fighting activities.

(123) "Impact" means, for the purpose of 401 KAR 5:026 through 5:031, a change in the chemical, physical, or biological quality or condition of a surface water.

(124) "Impairment" means, for the purpose of 401 KAR 5:026 through 5:031, a detrimental impact to a surface water that prevents attainment of a designated use.

(125) "Inactive mining operations" means mining sites that are not being actively mined, but which have an identifiable owner or operator. Inactive mining operations do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim.

(126) "Incorporated place" means a city, town, township, or village that is created under the Kentucky Revised Statutes.

(127) "Indigenous aquatic life" means naturally occurring aquatic organisms including but not limited to bacteria, fungi, algae, aquatic insects, other aquatic invertebrates, reptiles, amphibians, and fishes. Under some natural conditions one (1) or more of the above groups may be absent from a surface water.

(128) "Indirect discharge" or "discharge" means, for purposes of 401 KAR 5:057, the introduction of pollutants into a POTW from a nondomestic industrial source regulated by the program.

(129) "Indirect discharger" means a nondomestic discharger introducing pollutants to a publicly-owned treatment works.

(130) "Industrial user" or "user" means a source of indirect discharge.

(131) "Industrial wastes" means any liquid or other waste resulting from a process of industry, manufacture, trade, or business; or from the depletion of a natural resource.

(132) "Industrial wastewater treatment plant" or "IWWTP" means a privately owned WWTP with more than ninety (90) percent of the influent flow from sources of industrial waste.

(133) "Infiltration" means water other than wastewater that enters a sewer system from the ground through means such as defective pipes, pipe joints, connections, or manholes.

(134) "Inflow" means water other than wastewater that enters a sewer system from means such

as roof leaders, yard drains, area drains, drains from springs or swampy areas, openings in manhole covers, cross connections with storm sewers, catch basins, cooling towers, storm waters, source runoff, street wash waters, drainage, or any other source which directs rainwater into the sewer system.

(135) "Inhibition concentration of twenty-five (25) percent" or "IC<sub>25</sub>" means the concentration that is determined by a linear interpolation method for estimating the concentration at which a twenty-five (25) percent reduction is shown in reproduction or growth in test organisms, and which statistically approximates the concentration at which no unacceptable chronic effect is observed.

(136) "Injection" means, for purposes of 401 KAR 5:009, a type of land application in which the waste is placed directly beneath the land surface.

(137) "Intended use plan" means that document developed by the cabinet annually or biennially, as necessary, which contains a project priority list that prioritizes the cabinet's projects qualifying for federally assisted wastewater revolving fund monies pursuant to KRS Chapter 224A.

(138) "Interference" means a discharge which, alone or in conjunction with discharges from other sources:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use, or disposal; and

(b) Is a cause of a violation of a requirement of the POTW's KPDES permit, including an increase in the magnitude or duration of a violation, or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and administrative regulations or permits issued thereunder or under more stringent local administrative regulations: Section 405 of the Clean Water Act, as amended, the Solid Waste Disposal Act as amended (SWDA), including RCRA, and including any administrative regulations contained in a sludge management plan prepared pursuant to Subtitle D of the SWDA as amended, the Clean Air Act as amended, and the Toxic Substances Control Act as amended.

(139) "Intermediate facility" means a WWTP with an average daily design capacity of 10,000 to 49,999 gallons per day (GPD) or sewer lines of 2,500 feet to 5,000 feet in length including appurtenances.

(140) "Intermediate nonpublicly-owned treatment works" means a facility which has a design flow rate of between 10,000 gpd and 49,999 gpd of wastewater containing only conventional pollutants and which is not a POTW.

(141) "Intermediate WWTP" means:

(a) WWTP with an average daily design capacity of 10,000 to 49,999 gpd; or

(b) For coal washing facilities, a WWTP which serves a permanent coal processing facility that processes less than or equal to 500 tons per hour of raw coal.

(142) "Intermittent water" means a stream that flows only at certain times of the year.

(143) "Interstate agency" means an agency of which Kentucky and one (1) or more states is a member established by or under an agreement or compact, or any other agency, of which Kentucky and one (1) or more other states are members, having substantial powers or duties pertaining to the control of pollution as determined and approved by the secretary or administrator under the CWA or KRS Chapter 224.

(144) "IWWTP" means an industrial WWTP.

(145) "KAR" means Kentucky Administrative Regulations.

(146) "Karst" means the type of geologic terrane underlain by carbonate rocks where significant solution of rock has occurred due to flowing groundwater.

(147) "Karst feature" means a naturally occurring feature formed by the dissolution of carbonate rock including but not limited to a sinkhole drain, karst window, swallet, spring, sinking stream, or cave.

(148) "Kentucky Pollutant Discharge Elimination System" or "KPDES" means the Kentucky program for issuing, modifying, revoking and reissuing, revoking, monitoring and enforcing permits to discharge, and imposing and enforcing pretreatment requirements.

(149) "Kentucky Intermunicipal Operational Permit" or "KIMOP" means a permit issued pursuant to 401 KAR 5:005 for operating a publicly-owned sewer system which has more than 5,000 linear feet of sewer line which discharges to a sewer system, or a WWTP which is owned by another person.

(150) "Kentucky No Discharge Operational Permit" or "KNDOP" means a permit issued pursuant to 401 KAR 5:005 for operating a WWTP which does not have a discharge to a stream, including agricultural waste handling systems and spray irrigation systems.

(151) "kg" means kilograms.

(152) "KPDES" means the Kentucky Pollutant Discharge Elimination System.

(153) "KPDES permit" means a Kentucky Pollutant Discharge Elimination System permit issued to a facility, including a POTW, or activity pursuant to KRS Chapter 224 for the purpose of operating the facility or activity.

(154) "KRS" means Kentucky Revised Statutes.

(155) "Land application" means the uniform placement of animal waste on or in the soil by spraying or spreading on the surface, incorporation into the soil, or injection directly beneath the surface.

(156) "Land treatment" or "land disposal" means the application or incorporation of a pollutant onto or into the soil.

(157) "Large facility" means a WWTP with an average daily design capacity of 50,000 GPD or more, or sewer lines of more than 5,000 feet in length including appurtenances.

(158) "Large municipal separate storm sewer system" means all municipal separate storm sewers that are either:

(a) Located in an incorporated place with a population of 250,000 or more as determined by the latest census of the Bureau of Census;

(b) Owned or operated by a municipality other than that described in paragraph (a) of this subsection, and that are designated by the cabinet as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (a) of this subsection. In making this determination the cabinet may consider the following factors:

1. Physical interconnections between the municipal separate storm sewers;
2. The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (a) of this subsection;
3. The quantity and nature of pollutants discharged to waters of the Commonwealth;
4. The nature of the receiving waters; and
5. Other relevant factors; or

(c) The cabinet may, upon petition, designate as a large municipal separate storm sewer system, those municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one (1) or more of the systems described in paragraph (a) or (b) of

this subsection.

(159) "Large nonpublicly-owned treatment works" means a facility which has a design flow rate of greater than or equal to 50,000 gpd of wastewater containing only conventional pollutants and which is not a POTW.

(160) "Large WWTP" means:

(a) A WWTP with an average daily design capacity of 50,000 GPD or more; or

(b) For coal washing facilities, a WWTP which serves a permanent coal processing facility that processes more than 500 tons per hour of raw coal.

(161) "LC<sub>1</sub>" means that concentration of a toxic substance or mixture of toxic substances that is lethal, or immobilizing if appropriate, to one (1) percent of the organisms tested in a toxicity test during a specified exposure period.

(162) "LC<sub>50</sub>" means that concentration of a toxic substance or mixture of toxic substances that is lethal, or immobilizing if appropriate, to fifty (50) percent of the species tested in a toxicity test during a specified exposure period.

(163) "Log sorting and log storage facilities" means, for purposes of 401 KAR 5:050 to 5:080, facilities whose discharges result from the holding of unprocessed wood, for example, logs or roundwood with bark or after removal of bark held in self-contained bodies of water or stored on land where water is applied intentionally on the logs.

(164) "Long-term CSO control plan" means a control plan which complies with the "Combined Sewer Overflow Control Policy" issued by the U.S. EPA in the "Federal Register" on April 19, 1994 (59 FR 18688).

(165) "Maintain" means, for purposes of 401 KAR 5:026 through 5:031, to preserve or keep in present condition by not allowing an adverse permanent or long-term change to water quality or to a population of an aquatic organism or its habitat.

(166) "Maintenance replacement" means replacement of:

(a) Existing component parts with component parts that have similar characteristics and capacity; or

(b) A section of sewer or force main with the same size, alignment, and slope;

(c) The term does not include replacement of an entire WWTP with a new WWTP.

(167) "Major facility" means any KPDES facility or activity classified as such by the cabinet in cooperation with the regional administrator. Designation as a major industry as used in KRS 224.70-120, does not indicate automatic classification as a major facility.

(168) "Major industry" means an industry that generates and discharges process-related wastewater while engaged in commercial activities including resource recovery, manufacturing, products distribution, and wholesale and retail trade. Each industry has a design flow rate of greater than or equal to 50,000 gpd of process wastewater containing conventional, nonconventional, or thermal pollutants. A major industry designation is not a criteria for classification as a major facility.

(169) "Major municipal separate storm sewer outfall" or "major outfall" means:

(a) A municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of thirty-six (36) inches or more or its equivalent of a discharge from a single conveyance other than a circular pipe which is associated with a drainage area of more than fifty (50) acres; or

(b) For municipal separate storm sewers that receive storm water from lands zoned for industrial activity based on comprehensive zoning plans or the equivalent, an outfall that discharges

from a single pipe with an inside diameter of twelve (12) inches or more or from its equivalent of a discharge from other than a circular pipe associated with a drainage area of two (2) acres or more.

(170) "Major outfall" means a major municipal separate storm sewer outfall.

(171) "Manmade" means constructed by humans.

(172) "Maximum daily discharge limitation" means the highest allowable daily discharge.

(173) "Measurement" means the ability of the analytical method or protocol to quantify as well as identify the presence of the substance in question.

(174) "Medium municipal separate storm sewer system" means all municipal separate storm sewers that are either:

(a) Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the latest census by the Bureau of Census;

(b) Owned or operated by a municipality other than that described in paragraph (a) of this subsection, and that are designated by the cabinet as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (a) of this subsection. In making this determination the cabinet may consider the following factors:

1. Physical interconnections between the municipal separate storm sewers;
2. The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (a) of this subsection;
3. The quantity and nature of pollutants discharged to waters of the Commonwealth;
4. The nature of the receiving waters; and
5. Other relevant factors; or

(c) The cabinet, may, upon petition, designate as a medium municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one (1) or more of the systems described in paragraph (a) or (b) of this subsection.

(175) "Metalimnion" means the region of the thermocline.

(176) " $\mu\text{g/l}$ " means micrograms per liter, same as ppb, assuming unit density.

(177) "mgd" or "MGD" means million gallons per day.

(178) " $\text{mg/l}$ " means milligrams per liter, same as ppm, assuming unit density.

(179) "Milligrams per liter" or " $\text{mg/l}$ " means the milligrams of substance per liter of solution, and is equivalent to parts per million in water, assuming unit density.

(180) "Minimum design volume" means the treatment volume in the lagoon necessary to maintain an anaerobic condition in the lagoon.

(181) "Minor industry" means an industry that generates and discharges process-related wastewater while engaged in commercial activities including, but not limited to, resource recovery, manufacturing, products distribution, and wholesale and retail trade. Each industry has a design flow rate of less than 50,000 gpd of process wastewater containing conventional, nonconventional, or thermal pollutants. If a facility discharges process-related wastewater and does not qualify under this definition, then the facility shall be considered to be a major industry.

(182) "Minor modification to a WWTP" means, for purposes of construction approvals required by 401 KAR 5:005, a modification which does not change the WWTP average daily design hydraulic or organic treatment capacity of the WWTP or discharge location.

(183) "Mixing zone" means a domain of a water body contiguous to a treated or untreated

wastewater discharge with quality characteristics different from those of the receiving water. The discharge is in transit and progressively diluted from the source to the receiving system. The mixing zone is the domain where wastewater and receiving water mix.

(184) "Municipal separate storm sewer" means a conveyance or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains:

(a) Owned or operated by a state, city, town, county, district, association, or other public body created by or pursuant to law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law such as a sewer district, flood control district, or drainage district, or similar entity, or a designated and approved management agency under Section 208 of the CWA that discharges to waters of the Commonwealth;

(b) Designed or used for collecting or conveying storm water;

(c) Which is not a combined sewer; and

(d) Which is not part of a POTW.

(185) "Municipality" means a city, district, or other public body created by or under the Kentucky Revised Statutes and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency under CWA Section 208 (33 U.S.C. 1288).

(186) "National Pollutant Discharge Elimination System" or "NPDES" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements.

(187) "National pretreatment standard", "pretreatment standard", or "standard" means a federal regulation containing pollutant discharge limits promulgated by the U.S. EPA in accordance with Section 307(b) and (c) of the Act, which applies to industrial users. This term includes prohibitive discharge limits established pursuant to 401 KAR 5:057.

(188) "Natural Resources Conservation Service" or "NRCS" means the organization created pursuant to 7 U.S.C. 6962 in the United States Department of Agriculture. The NRCS was formerly called the Soil Conservation Service.

(189) "Natural temperature" means, for purposes of 401 KAR 5:026 through 5:031, the temperature that would exist in waters of the Commonwealth without the change of enthalpy of artificial origin, as contrasted with that caused by climatic change or naturally occurring variable temperature associated with riparian vegetation and seasonal changes.

(190) "Natural water quality" means, for purposes of 401 KAR 5:026 through 5:031, those naturally occurring physical, chemical, and biological properties of waters.

(191) "Net discharge" means, for purposes of 401 KAR 5:026 through 5:031, the amount of substance released to a surface water by excluding the influent value from the effluent value if both the intake and discharge are from and to the same or similar body of water.

(192) "New discharger" means, for purposes of 401 KAR 5:050 to 5:080, any building, structure, facility or installation:

(a)1. From which there is or may be a discharge of pollutants;

2. That did not commence the discharge of pollutants at a particular site prior to August 13, 1979;

3. Which has never received a finally effective NPDES or KPDES permit for discharges at that site; and

4. Which is not a new source.

(b) This definition includes an indirect discharger which commences discharging into the waters of the Commonwealth after August 13, 1979. It also includes any existing mobile point source that begins discharging at a site for which it does not have a permit.

(193) "New source" means:

(a) For purposes of 401 KAR 5:050 to 5:080, any building, structure, facility, or installation from which there is or may be a direct or indirect discharge of pollutants, the construction of which commenced:

1. After promulgation of EPA's standards of performance or pretreatment standards which are applicable to such source; or

2. After proposal of EPA's standards of performance or pretreatment standards which are applicable to such source, but only if the federal standards are promulgated within 120 days of their proposal; or

(b)I. For purposes of 401 KAR 5:057, a building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards which will be applicable to the source if the standards are thereafter promulgated if:

a. The building, structure, facility or installation is constructed at a site at which no other source is located;

b. The building, structure, facility or installation totally replaces the process of production equipment that causes the discharge of pollutants at an existing source; or

c. The production or wastewater generating processes of the building, structure, facility, or installation are substantially independent of an existing source at the same site. In determining if these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source shall be considered.

2. Construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility, or installation meeting the criteria of subparagraph 1b or c of this paragraph but otherwise alters, replaces, or adds to existing process or production equipment.

3. Construction of a new source has commenced if the owner or operator has:

a. Begun, or caused to begin as part of a continuous on-site construction program:

(i) A placement, assembly, or installation of facilities or equipment;

(ii) Significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or

b. Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which may be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this clause.

(194) "Nonconventional pollutant" means a pollutant not considered to be a conventional pollutant, including priority pollutants identified in 401 KAR 5:060.

(195) "Nonpoint" means any source of pollutants not defined by a point source, as used in this chapter.

(196) "Nonprocess industry" means an industry that generates and discharges only nonprocess wastewater while engaged in commercial activities including manufacturing, resource recovery, products distribution, and wholesale and retail trade. Each industry discharges nonprocess wastewater, for example, noncontact cooling or stockpile run-off, and discharges wastewater that neither contains nor is likely to contain toxic pollutants in concentrations equal to or greater than the ninety-six (96) hour lethal concentration for fifty (50) percent mortality (96 LC<sub>50</sub>) for a representative indigenous aquatic organism. If any of the above conditions is not met, then the discharge is considered to be from a minor industry.

(197) "NPDES" is defined in KRS 224.01-010.

(198) "NRCS" means the Natural Resources Conservation Service.

(199) "Nutrient management plan" means the plan for an individual operation developed for the purpose of recycling nutrients from animal waste onto cropland or pasture in a manner that does not cause environmental harm.

(200) "Oil" means, for purposes of 401 KAR 5:090, natural crude oil or petroleum and other hydrocarbons, regardless of specific gravity, which are produced at the well in liquid form and which are not the result of condensation of gas after it leaves the underground reservoir.

(201) "O&M" means operation and maintenance.

(202) "Operate" means, for purposes of 401 KAR 5:090, any act relating to the construction, operation, or maintenance of any facility.

(203) "Operator" means:

(a) Any person involved in the operation of a facility or activity;

(b) For purposes of 401 KAR 5:010, any person involved in the operation of a wastewater system; or

(c) For purposes of 401 KAR 5:090, any person who operates a facility.

(204) "Other wastes" means sawdust, bark or other wood debris, garbage, refuse, ashes, offal, tar, oil, chemicals, acid drainage, wastes from agricultural enterprises, and other foreign substances not included within the definitions of industrial wastes and sewage which may cause or contribute to the pollution of any waters of the Commonwealth.

(205) "Outfall" means a point source at the point where a municipal separate storm sewer discharges to waters of the Commonwealth, but does not include open conveyances connecting two (2) municipal separate storm sewers, or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the Commonwealth and are used to convey waters of the Commonwealth.

(206) "Outstanding national resource water" means a surface water categorized by the cabinet as an outstanding national resource water pursuant to 401 KAR 5:030.

(207) "Outstanding state resource water" means a surface water designated by the cabinet as an outstanding state resource water pursuant to 401 KAR 5:031.

(208) "Overburden" means any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil or similar naturally-occurring surface materials that are not disturbed by mining operations.

(209) "Overflow" means:

(a) Any intentional or unintentional diversion of flow from a facility; or

(b) For purposes of 401 KAR 5:057, the intentional or unintentional diversion of flow from the POTW before the POTW treatment plant.

(210) "Owner" means any person who possesses any interest in:

- (a) The right to develop, operate, or produce oil or gas; or
- (b) Any facility or activity.

(211) "Package WWTP" means a factory-built WWTP which is transported to and assembled or set in place at the site.

(212) "Pass through" means a discharge which exits the POTW into waters of the Commonwealth in quantities or concentrations which, alone or in conjunction with discharges from other sources, is a cause of violation of a requirement of the POTW's KPDES permit, including an increase in the magnitude or duration of a violation.

(213) "pCi/l" means picocuries per liter.

(214) "PCR" means primary contact recreation.

(215) "Permit" means:

(a) For purposes of 401 KAR 5:005 or 5:006, a document issued by the cabinet which authorizes the permittee to construct, modify, or operate a facility;

(b) For purposes of 401 KAR 5:009, a Swine Waste Management Permit; or

(c) For purposes of 401 KAR 5:050 to 5:080, a KPDES permit.

(216) "Plan of study" means a report that contains the following information required for a regional facility plan by 401 KAR 5:006, Section 4: planning area maps; a discussion of the need for sewer service in the area; population projections; and an estimation of the twenty (20) year cost by category.

(217) "Planning area" means the geographic area proposed to be served by a regional planning agency in a projected twenty (20) year period.

(218) "Point source" means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or concentrated animal feeding operation, from which pollutants are or may be discharged. The term does not include agricultural storm water run-off or return flows from irrigated agriculture.

(219) "POTW" means publicly-owned treatment works as defined in KRS 224.01-010.

(220) "POTW treatment plant" means that portion of the POTW which is designed to provide treatment, including recycling and reclamation, of municipal sewage and industrial waste.

(221) "ppb" means parts per billion; assuming unit density, same as µg/l.

(222) "ppm" means parts per million; assuming unit density, same as mg/l.

(223) "Preexisting discharge" means any discharge that is occurring when applying for a KPDES permit under 401 KAR 5:029 or 5:040.

(224) "Pretreatment" means the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing the pollutants into a POTW. The reduction or alteration may be obtained by physical, chemical, or biological processes, process changes or by other means, except as prohibited by 401 KAR 5:057. Appropriate pretreatment technology includes control equipment, such as equalization tanks or facilities, for protection against surges or slug loadings that may interfere with or otherwise be incompatible with the POTW. However, if wastewater from a regulated process is mixed in an equalization facility with unregulated wastewater or with wastewater from another regulated process, the effluent from the equalization facility shall meet an adjusted pretreatment limit, calculated in accordance with 401 KAR 5:057.

(225) "Pretreatment requirement" means a substantive or procedural requirement related to pretreatment, other than a pretreatment standard, imposed on an industrial user.

- (226) "Pretreatment standard" means a national pretreatment standard.
- (227) "Primary contact recreation water" means those waters suitable for full body contact recreation during the recreation season of May 1 through October 31.
- (228) "Primary industry category" means any industry category listed as being a primary industry in 401 KAR 5:060.
- (229) "Primary responsibility" means having the authority to conduct the procedures and practices necessary to ensure that the wastewater system or any portion thereof is operated in accordance with accepted practices, laws, and administrative regulations of the Commonwealth, or to supervise others in conducting these practices.
- (230) "Privately-owned treatment works" means any device or system which is used to treat wastes from any facility or source of sewage whose owner or operator is not the owner or operator of the treatment works and which is not a POTW.
- (231) "Process wastewater" means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product.
- (232) "Produced water" means all water, pollutants, and combinations thereof resulting, obtained, or produced from the exploration, drilling, or production of oil or gas.
- (233) "Productive aquatic community" means an assemblage of indigenous aquatic life capable of reproduction and growth.
- (234) "Professional engineer" or "engineer" means a person registered to practice engineering pursuant to KRS Chapter 322.
- (235) "Project priority list" means the list developed by the cabinet pursuant to KRS Chapter 224A which includes a priority ranking of applicants for the construction of wastewater treatment works under 33 U.S.C. 1313(e)(3)(H).
- (236) "Propagation" means the continuance of a species by successful spawning, hatching, and development or natural generation in the natural environment, as opposed to the maintenance of the species by artificial culture and stocking.
- (237) "Proposed permit" means a KPDES permit prepared after the close of the public comment period and, when applicable, any public hearing and administrative appeals, which is sent to EPA for review before final issuance by the cabinet. A proposed permit is not a draft permit.
- (238) "Public water" shall have the meaning given it in 401 KAR 8:010.
- (239) "RCRA" means the Resource Conservation Recovery Act as amended (42 U.S.C. 6901 et seq.).
- (240) "Reclamation area" means the surface area of a coal mine which has been returned to required contour and on which revegetation (seeding or planting) work has commenced.
- (241) "Recommencing discharger" means a source which recommences discharge after terminating operations.
- (242) "Regional administrator" means the regional administrator of the Region IV office of the U.S. EPA or the authorized representative of the regional administrator.
- (243) "Regional facility" means a facility designated by a regional facility plan or water quality management plan to provide wastewater collection, transportation, or treatment services for a specific area. This facility shall be owned by a city, county, or other public body that was created by KRS Chapter 67, 67A, 74, 76, 96, 108, or 220.
- (244) "Regional facility plan" means a type of water quality management plan addressing point sources of pollution for the purpose of areawide waste treatment management planning

prepared by the designated regional planning agency pursuant to Sections 201, 205, and 208 of the CWA to control point sources of pollution within a planning area.

(245) "Regional planning agency" means a governmental agency, such as a city, county, or other public body created by KRS Chapter 67, 67A, 74, 76, 96, 108, or 220, that has been designated pursuant to 33 U.S.C. 1288 of the CWA and 40 C.F.R. Part 130 to provide planning for the treatment of wastewater and for controls and recommendations relating to wastewater for a particular area. Those existing agencies that have developed plans pursuant to Sections 201, 205, 208, and 303(e) of the CWA shall be considered the regional planning agency for the area.

(246) "Regional sewage collection system" means a sewage collection system designated by a regional planning agency which is owned by a city, county, or other public body that was created by KRS Chapter 67, 67A, 74, 76, 96, 108, or 220.

(247) "Register" means to file forms with the division which contain information as to oil and gas well geographic location, production, produced water production, methods used for treating, storing, or disposing of produced water, and other information deemed necessary by the division.

(248) "Remined area" means only that area of any coal remining operation on which a coal mining operation was conducted before August 3, 1977.

(249) "Removal" means, for purposes of 401 KAR 5:057, a reduction in the amount of a pollutant in the POTW's effluent or alteration of the nature of a pollutant during treatment at the POTW. The reduction or alteration may be obtained by physical, chemical, or biological means and may be the result of specifically designed POTW capabilities or may be incidental to the operation of the treatment system. Removal shall not mean dilution of a pollutant in the POTW.

(250) "Representative important species" means species which are representative, in terms of their biological needs, of a balanced, indigenous community of shellfish, fish, and wildlife in the body of water into which a discharge of heat is made.

(251) "Representative indicator organism" means an aquatic organism designated for use in toxicity testing because of its relative sensitivity to toxicants and its widespread distribution in the aquatic environment.

(252) "Requester" means any industrial user or a POTW or other interested person seeking a variance from the limits specified in a categorical pretreatment standard.

(253) "Residual solids" means the accumulated solid waste in the lower portion of a lagoon that contains greater than two and zero-tenths (2.0) percent total solids by dry weight analysis.

(254) "Rock crushing and gravel washing facilities" means facilities which process crushed and broken stone, gravel, and riprap.

(255) "Run-off coefficient" means the fraction of total rainfall that will appear at a conveyance as run-off.

(256) "SARA" means the Superfund Amendments and Reauthorization Act, as amended.

(257) "Schedule of compliance" means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements leading to compliance with KRS Chapter 224 and administrative regulations promulgated pursuant thereto.

(258) "SCR" means secondary contact recreation.

(259) "Secondary contact recreation waters" means those waters that are suitable for partial body contact recreation, with minimal threat to public health due to water quality.

(260) "Secondary industry category" means any industry category which is not a primary industry category.

(261) "Secondary treatment" means that degree of treatment which results in an effluent

quality which meets the minimum requirements of 401 KAR 5:045.

(262) "Service area" means that geographic area currently being served by a regional facility.

(263) "Seven-Q-ten" or "7Q<sub>10</sub>" means that minimum average flow which occurs for seven (7) consecutive days with a recurrence interval of ten (10) years.

(264) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage shall not mean economic loss caused by delays in production.

(265) "Sewage" means the water-carried human or animal wastes from residences, buildings, or other places together with industrial wastes or underground, surface, storm or other water, as may be present.

(266) "Sewage sludge" means the solids, residues, and precipitate separated from or created in sewage by the unit processes of a wastewater treatment plant. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and storm water run-off, that are discharged to or otherwise enter a wastewater treatment plant.

(267) "Sewer line" means those devices used for collecting, transporting, pumping, or disposing of sewage, but not a building sewer which serves an individual building. A sewer line begins at the junction of two (2) building sewers which serve different buildings. Sewer lines include gravity sewer lines, pump stations, and force mains.

(268) "Sewer line extension" means a proposed construction project which extends a sewer system; it includes gravity sewer lines, pump stations, and force mains.

(269) "Sewer system" means the network of sewer lines, pump stations, and force mains that discharge to a common WWTP.

(270) "SIC" means Standard Industrial Classification.

(271) "Significant industrial user" means:

(a) Except as provided in paragraph (b) of this subsection:

1. Industrial users subject to categorical pretreatment standards promulgated by EPA and codified in 40 C.F.R. Chapter I, Subchapter N (Parts 401 through 471); and

2. Any other industrial user that:

a. Discharges an average of 25,000 gallons per day or more of process wastewater to the POTW, excluding sanitary, noncontact cooling and boiler blowdown wastewater;

b. Contributes a process wastestream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or

c. Is designated as such by the control authority on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating a pretreatment standard or requirement.

(b) Upon a finding that an industrial user meeting the criteria for a significant industrial user has no reasonable potential for adversely affecting the POTW's operation or for violating a pretreatment standard or requirement, the control authority may, on its own initiative or in response to a petition received from an industrial user or a POTW, and in accordance with 401 KAR 5:057, determine that the industrial user is not a significant industrial user.

(272) "Significant materials" means, but is not limited to, and for purposes of 401 KAR 5:050 to 5:080: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous

substances designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

(273) "Silvicultural point source" means, for purposes of 401 KAR 5:050 to 5:080, any discernible, confined, and discrete conveyance related to rock crushing, gravel washing, log sorting, or log storage facilities which are operated in connection with silvicultural activities and from which pollutants are discharged into waters of the Commonwealth. The term does not include nonpoint source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance from which there is natural run-off.

(274) "Sinkhole" means a naturally occurring topographic depression in a karst area. Its drainage is subterranean and serves as a recharge source for groundwater and it is formed by the collapse of a conduit or the solution of bedrock.

(275) "Site" means, for purposes of 401 KAR 5:050 to 5:080, the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

(276) "Sludge requirements" means the following statutory provisions and administrative regulations or permits issued thereunder, or under more stringent local administrative regulations: Section 405 of the Clean Water Act, as amended; the Solid Waste Disposal Act (SWDA), as amended, including Title II, more commonly referred to as the Resource Conservation Recovery Act (RCRA) and administrative regulations contained in any sludge management plan prepared pursuant to Subtitle D of SWDA, as amended; the Clean Air Act, as amended; and the Toxic Substances Control Act, as amended.

(277) "SMCRA" means the Surface Mining Control and Reclamation Act, as amended (33 U.S.C. 1201 et seq.).

(278) "Small facility" means a WWTP with an average daily design capacity less than 10,000 GPD or sewer lines of less than 2,500 feet in length including appurtenances.

(279) "Small nonpublicly owned treatment works" means a facility which has a design flow rate of less than 10,000 gpd of wastewater containing only conventional pollutants and which is not a POTW.

(280) "Small WWTP" means:

- (a) A WWTP with an average daily design capacity of less than 10,000 gpd; or
- (b) For coal washing facilities, a WWTP which serves a portable coal processing facility.

(281) "Source" means any building, structure, facility, or installation from which there is or may be a discharge of pollutants.

(282) "SPCC" means spill prevention control and countermeasure.

(283) "Standard" means:

- (a) For purposes of 401 KAR 5:026, 5:029, 5:030 or 5:031, a water quality standard; or
- (b) For purposes of 401 KAR 5:057, a pretreatment standard.

(284) "Storm water" means storm water run-off, snow melt run-off, and surface run-off and drainage.

(285) "Storm water discharge associated with industrial activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw material storage areas at an industrial plant. The term

does not include discharges from facilities or activities excluded from the KPDES program under 401 KAR 5:055. For the categories of industries identified in paragraphs (a) to (j) of this subsection, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or byproducts used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters; sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas including tank farms for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the categories of industries identified in paragraph (k) of this subsection, the term includes only storm water discharges from all the areas except access roads and rail lines, that are listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this subsection, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, byproduct, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities including industrial facilities that are federally, state, or municipally owned or operated that meet the description of the facilities listed in this subsection, include those facilities designated under 401 KAR 5:060, Section 12(1)(a). The following categories of facilities are considered to be engaging in an industrial activity for purposes of this subsection:

- (a) Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 401 KAR 5:065, Section 4, except facilities with toxic pollutant effluent standards which are exempted under paragraph (k) of this subsection;
- (b) Facilities classified as Standard Industrial Classifications 24 except 2434; 26 except 265 and 267; 28 except 283; 29; 311; 32 except 323; 33; 3441; and 373;
- (c) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations, except for areas of coal mining operations that are no longer reclamation areas because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of noncoal mining operations which have been released from applicable state or federal reclamation requirements after December 17, 1990, and oil and gas exploration production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, by-products, or waste products located on the site of these operations;
- (d) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;
- (e) Landfills, land application sites, and open dumps that receive or have received any industrial wastes, that is waste that is received from any of the facilities described under this subsection, including those that are subject to regulation under Subtitle D of RCRA;
- (f) Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as

Standard Industrial Classification 5015 and 5093;

(g) Steam electric power generating facilities, including coal handling sites;

(h) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 except 4221-4225, 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance, including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication, equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (a) to (g) and (i) to (k) of this subsection are associated with industrial activity;

(i) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including lands dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one and zero-tenths (1.0) mgd or more, or required to have an approved pretreatment program under 401 KAR 5:057. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the CWA;

(j) Construction activity including clearing, grading and excavation activities except operations that result in the disturbance of less than five (5) acres of total land area which are not part of a larger common plan of development or sale;

(k) Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 except 311, 323, 34 except 3441, 35, 36, 37 except 373, 38, 39, 4221-4225, and which are not otherwise included within categories of paragraphs (b) to (j) of this subsection.

(286) "Stripper well" means any oil well producing ten (10) barrels or less per day of oil.

(287) "Submission" means, for purposes of 401 KAR 5:057:

(a) A request by a POTW to the cabinet for approval of a pretreatment program; and

(b) A request by a POTW to the cabinet for authority to revise the discharge limits in categorical pretreatment standards to reflect POTW pollutant removals.

(288) "Supernatant" means the water that accumulates in the upper portion of a lagoon and contains no greater than two and zero-tenths (2.0) percent total solids by dry weight analysis.

(289) "Surface mining operation" means only those facilities required to have a permit by 405 KAR Chapters 7 through 26.

(290) "Surface waters" means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Effluent ditches and lagoons used for waste treatment which are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the Commonwealth.

(291) "SWDA" means the Solid Waste Disposal Act, as amended (42 U.S.C. 6901 et seq.).

(292) "Swine feeding operation" means an operation that:

(a) Confines 1,000 or more swine units at a given time; and

(b) Is not a concentrated animal feeding operation.

(293) "Swine units" means the units of measurement used to determine the applicability of 401 KAR 5:009. The number of units shall be determined using the formula in 401 KAR 5:009.

(294) "Swine waste" means the waste from a swine feeding operation, including manure,

bedding, soil, wasted water and feed, and flushing water from swine confinement.

(295) "Swine waste lagoon" means a structure constructed pursuant to 401 KAR 5:009 for the purpose of collecting, storing, and treating the waste from a swine feeding operation.

(296) "Swine Waste Management Permit" or "SWMP" means the permit issued pursuant to 401 KAR 5:009 that authorizes the construction or operation of one (1) or more swine waste lagoons and all related appurtenances and the implementation of a nutrient management plan at the swine feeding operation.

(297) "SWMP" means a swine waste management permit.

(298) "Tank battery" means an installation where oil is collected from wellheads and is separated from produced water.

(299) "TDS" means total dissolved solids.

(300) "Thermocline" means the plane in a thermally stratified body of water in which the maximum rate of decrease in temperature occurs with respect to depth.

(301) "Total dissolved solids" or "TDS" means the total dissolved solids (filterable residue) as determined by use of the method specified in 40 C.F.R. Part 136.

(302) "Total suspended solids" or "TSS" means the total suspended solids (nonfilterable residue) as determined by use of the method specified in 40 C.F.R. Part 136.

(303) "Toxic pollutant" means, for purposes of 401 KAR 5:050 to 5:080, any pollutant listed as being toxic in 401 KAR 5:080.

(304) "Treatment lagoon" or "effluent lagoon" means, as used in 401 KAR 5:029 and as applied to facilities subject to 401 KAR 5:090, a secondary recovery or water-flood impoundment on which on-site construction commenced before May 19, 1980; owned or operated by a person eligible to receive a KPDES permit for a discharge from that impoundment, if used for the purpose of diluting produced water, and if the owner or operator received approval from the cabinet of its request for designation as such on or before September 4, 1986.

(305) "Toxic substance" means a substance that is bioaccumulative, synergistic, antagonistic, teratogenic, mutagenic or carcinogenic and causes death, disease, a behavioral abnormality, a physiological malfunction, or a physical deformity in an organism or its offspring or interferes with normal propagation.

(306) "TSS" means total suspended solids.

(307) "Twenty-four (24) hour composite sample" means not less than twelve (12) effluent portions collected at regular intervals over a period of twenty-four (24) hours which are composited in proportion to flow.

(308) "Twenty-five (25) year, twenty-four (24) hour rainfall event" means a twenty-four (24) hour rainfall event with a probable recurrence interval of once in twenty-five (25) years, as determined by "Rainfall Frequency Values for Kentucky, Engineering Memorandum No. 2, April 30, 1971, Revised July 1, 1979", incorporated by reference in Section 3 of this administrative regulation.

(309) "Underground injection" means a well injection.

(310) "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with categorical pretreatment standards or technology-based effluent limitations because of factors beyond the reasonable control of the industrial user or permittee. An upset shall not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

- (311) "U.S.C. " means United States Code.
- (312) "U.S. EPA" means the United States Environmental Protection Agency.
- (313) "USGS" means the United States Geological Survey.
- (314) "Use protected water" means a surface water categorized as use protected by the cabinet pursuant to 401 KAR 5:030.
- (315) "Variance" means:
- (a) For purposes of 401 KAR 5:050 through 5:080, any mechanism or provision under the KPDES administrative regulations which allows modification to or waiver of the generally applicable effluent limitation requirements or time deadlines; or
  - (b) For purposes of 401 KAR 5:009, a mechanism or provision that allows a modification or waiver of specified requirements.
- (316) "WAH" means warm water aquatic habitat.
- (317) "Warm water aquatic habitat" or "WAH" means any surface water and associated substrate capable of supporting indigenous warm water aquatic life.
- (318) "Wastewater system" means a sewage system as defined in KRS 224.01-010.
- (319) "Wastewater treatment plant" or "WWTP" means a facility used for the treatment and disposal of sewage.
- (320) "Water quality management plan" or "WQM plan" means:
- (a) A plan consisting of initial plans produced in accordance with Sections 208 and 303(e) of the CWA and certified and approved updates to those plans; or
  - (b) A state or areawide waste treatment management plan developed and updated in accordance with Sections 201, 205(j), 208, and 303(e) of the CWA and 40 C.F.R. Part 130.
- (321) "Water quality standard" means an administrative regulation promulgated by the cabinet establishing the designated use of a surface water and the water quality criteria necessary to maintain and protect that designated use.
- (322) "Well" or "water well" means:
- (a) For purposes of 401 KAR 5:005, any excavation or opening in the surface of the earth that is drilled, cored, bored, washed, driven, jetted, or otherwise constructed when the actual or intended use in whole or in part of an excavation is the removal of water for any purpose, including but not limited to culinary household purposes, animal consumption, food manufacture, use of geothermal resources for domestic heating purposes, and industrial, irrigation, and dewatering purposes;
  - (b) For purposes of 401 KAR 5:050 to 5:080, a bored, drilled, or driven shaft, or a dug hole, whose depth is greater than the largest surface dimension; or
  - (c) For purposes of 401 KAR 5:090, a borehole drilled, or proposed to be drilled for the purpose of producing gas or oil or one (1) through which gas or oil is being produced, or a borehole drilled or proposed to be drilled for the purpose of injecting any water, gas, produced water, or other fluid therein or one (1) into which any water, gas, produced water, or other fluid is being injected.
- (323) "Wellhead protection area" means:
- (a) The surface and subsurface area surrounding a water well, well field, or spring, supplying a public water system, through which pollutants are reasonably likely to move toward and reach the water well, well field, or spring; or
  - (b) An area defined as a wellhead protection area in a county water supply plan.
- (324) "Well injection" means the subsurface emplacement of fluids through a bored, drilled or driven well; or through a dug well, where the depth of the dug well is greater than the largest

surface dimension.

(325) "Wetlands" means land that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

(326) "Whole effluent toxicity" means the aggregate toxic effect of an effluent measured directly by a toxicity test.

(327) "WWTP" means wastewater treatment plant.

(328) "Zone" means a subsurface layer or stratum capable of producing or receiving fluids.

(329) "Zone of initial dilution" means the limited area permitted by the cabinet surrounding or downstream from a discharge location where rapid, first stage mixing occurs. The zone of initial dilution is the domain where wastewater and receiving water initially mix.

(330) "Zone of saturation" means the zone in which all the subsurface voids in the rock or soil are filled with water.

(331) "100-year, twenty-four (24) hour rainfall event" means a twenty-four (24) hour rainfall event with a probable recurrence interval of once in 100 years, as determined by "Rainfall Frequency Values for Kentucky, Engineering Memorandum No. 2, April 30, 1971, Revised July 1, 1979", incorporated by reference in Section 3 of this administrative regulation.

**Section 2. Federal Regulations Adopted Without Change.** The following federal regulations govern the subject matter of this administrative regulation and are hereby adopted without change. The federal regulations are available for inspection and copying, during normal business hours of 8:00 a.m. to 4:30 p.m., eastern time, excluding state holidays, at the Division of Water, 14 Reilly Road, Frankfort, Kentucky, or may be purchased from the U.S. Superintendent of Documents, Washington, D.C.

(1) 40 C.F.R. Part 116, "Designation of Hazardous Substances", July 1, 1997, U.S. Environmental Protection Agency, U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328;

(2) 40 C.F.R. Part 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants", July 1, 1998, U.S. Environmental Protection Agency, U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328; and

(3) 40 C.F.R. Chapter I, Subchapter N, Parts 401 through 471, "Effluent Guidelines and Standards", July 1997, U.S. Environmental Protection Agency, U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328.

### **Section 3. Incorporation by Reference.**

(1) "Rainfall Frequency Values for Kentucky, Engineering Memorandum No. 2, April 30, 1971; Revised June 1, 1979"; Commonwealth of Kentucky, Department for Natural Resources and Environmental Protection, Bureau of Natural Resources, Division of Water Resources, is incorporated by reference.

(2) This material may be inspected, copied, or obtained at the Kentucky Division of Water, 14 Reilly Road, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m. (25 Ky. R. 690, eff. 11-18-98; 26 Ky. R. 1119, eff. 12-8-99.)

**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET**  
**Department for Environmental Protection**  
**Division of Water**

**401 KAR 5:026. Designation of uses of surface waters.**

RELATES TO: KRS 146.200 to 146.360, 146.410 to 146.535, 146.550 to 146.570, 146.600 to 146.619, 146.990, 224.01-100, 224.01-400, 224.16-050, 224.16-070, 224.40, 224.43, 224.46, 224.50, 224.60, 224.70, 224.71, 224.73

STATUTORY AUTHORITY: KRS 146.220, 146.241, 146.270, 146.410, 146.450, 146.460, 146.465, 224.10-100, 224.16-050, 224.16-060, 224.70-100, 224.70-110, 40 C.F.R. Part 131, 16 U.S.C. 1271 et seq., 1531 et seq., 33 U.S.C. 1311, 1313, 1314, 1316, 1341

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to develop and conduct a comprehensive program for the management of water resources and to provide for the prevention, abatement, and control of pollution. This administrative regulation and 401 KAR 5:002, 5:029, 5:030, and 5:031 establish procedures to protect the surface waters of the Commonwealth, and thus protect water resources. This administrative regulation applies the designated uses described in 401 KAR 5:031 to the surface waters of the Commonwealth. This administrative regulation also makes all surface waters subject to the general criteria specified in 401 KAR 5:031, Section 2. Definitions for terms used in this administrative regulation are found in 401 KAR 5:002.

**Section 1. Scope of Designation.**

(1) Surface waters listed in this administrative regulation shall be designated for all legitimate uses contained in KRS 224.70-100(1) except as specified in 401 KAR 5:031, Sections 5 and 7, or until redesignated in accordance with the procedures of this administrative regulation.

(2) Designated uses are:

- (a) Warm water aquatic habitat;
- (b) Cold water aquatic habitat;
- (c) Primary contact recreation;
- (d) Secondary contact recreation;
- (e) Domestic water supply; and
- (f) Outstanding state resource water.

(3) Listed waters shall meet all criteria applicable to their designated uses and those criteria listed in 401 KAR 5:031, Section 2, unless the cabinet grants an exception pursuant to 401 KAR 5:031, Section 9 or 10.

(4) Outstanding state resource waters may have unique water quality characteristics that shall be protected by additional criteria established in 401 KAR 5:031, Section 7.

**Section 2. Redesignation of Surface Water Uses.**

(1) Surface waters may be redesignated only upon affirmative findings by the cabinet pursuant to Sections 3 and 4 of this administrative regulation. Before redesignating a surface water, the cabinet shall provide notice and an opportunity for a public hearing.

(2) In redesignating a surface water, the cabinet shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream surface waters.

(3) A designated use shall not be removed for a surface water if that use is an existing use, or if the use may be attained by implementing effluent limitations required under Sections 301(b) and 306 of the Clean Water Act, 33 U.S.C. 1311(b) and 1316, and by implementing cost-effective and reasonable best management practices for nonpoint source control.

(4) If a surface water is designated for a use that is not an existing use, the cabinet shall redesignate the surface water upon demonstration that the designated use is unattainable because:

- (a) Naturally occurring pollutant concentrations prevent the attainment of the use;
- (b) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges;
- (c) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;
- (d) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the surface water to its original condition or to operate such modification in a way that would result in the attainment of the use;
- (e) Physical conditions related to the natural features of the surface water, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of the aquatic life use; or
- (f) Controls more stringent than those required by Sections 301(b) and 306 of the Clean Water Act, 33 U.S.C. 1311(b) and 1316, would result in substantial and widespread economic and social impact as determined by the guidelines in "Interim Economic Guidance for Water Quality Standards Workbook", EPA, March 1995 incorporated by reference in Section 6 of this administrative regulation.

(5) Redesignations shall be consistent with the antidegradation provisions of 401 KAR 5:029 and 5:030.

### **Section 3. Documentation for Redesignations.**

(1) A person may request redesignation of surface water uses by petition to the cabinet. The petitioner shall provide the cabinet with the documentation required in subsection (3) of this section and shall have the burden of proof that the redesignation is appropriate.

(2) The cabinet may propose redesignations of surface water uses. The cabinet shall provide documentation for those surface waters that it proposes for use redesignation.

(3) Documentation to support the redesignation of a surface water of the Commonwealth shall be:

- (a) A United States Geological Survey 7.5 minute topographic map or its equivalent approved by the cabinet showing those surface waters to be redesignated, with a description consisting of a river mile index with existing and proposed discharge points;
- (b) Existing uses and water quality data for the surface waters for which the redesignation is proposed. If adequate data are unavailable, additional studies may be required by the cabinet;
- (c) Descriptions of general land uses and specific land uses adjacent to the surface waters for which the redesignation is proposed;
- (d) The existing and designated uses of the downstream waters into which the surface water under consideration discharges;
- (e) General physical characteristics of the surface water including width, depth, bottom composition, and slope;
- (f) The frequency of occasions when there is no natural flow in the surface water and the 7Q<sub>10</sub> and harmonic mean flow values for the surface water and adjacent surface waters;

(g) An assessment of the existing and potential aquatic life habitat in the surface waters under consideration and the adjacent upstream surface waters. The existing aquatic life shall be documented and livestock and natural wildlife dependence on the surface water shall be assessed. The occurrence of individuals or populations, indices of diversity and well-being, and abundance of species of any unique native biota shall be documented;

(h) The proposed designated uses for the surface water in question; and

(i) An explanation of the irretrievable person-induced, or natural conditions which preclude attainment of a higher use designation or an assessment of the substantial and widespread social and economic impacts resulting from the imposition of additional controls necessary for existing point sources, beyond the most stringent effluent limitation levels normally required for the sources.

#### **Section 4. Procedures for Redesignation.**

(1) For each of the surface waters for which a redesignation is proposed, the cabinet or petitioner shall prepare a fact sheet containing the following information:

(a) The name and address of the petitioner;

(b) The name and sketch or description of the surface water proposed for specified use redesignations, including the location of existing and proposed dischargers;

(c) The proposed use redesignations;

(d) A brief abstract of the supportive documentation which demonstrates that the redesignation is appropriate;

(e) The appropriate water quality criteria for the surface water based on the proposed designated use;

(f) The treatment requirements proposed for discharges to the surface water in question if designated for the proposed use; and

(g) A "plain English" summary of the implications of the designation for the community and other users or potential users of the surface water in question.

(2) The cabinet shall document the determination to propose or deny redesignation as a result of a petition, and shall provide a copy of the decision to the petitioner and other interested parties.

#### **Section 5. Surface Water Use Designations.**

(1) Listed in the tables below are the use designations for specific surface waters of the Commonwealth. The county column indicates the county in which the mouth or outlet of the surface water is located. The identifying symbols for use designations are:

WAH - Warm Water Aquatic Habitat  
 CAH - Cold Water Aquatic Habitat  
 PCR - Primary Contact Recreation  
 SCR - Secondary Contact Recreation  
 DWS - Domestic Water Supply, applicable at existing points of public water supply withdrawal

• OSRW - Outstanding State Resource Water

(2) Surface waters not specifically listed in this section are designated for the use of warm water aquatic habitat, primary contact recreation, secondary contact recreation and domestic water supply in accordance with Section 1 of this administrative regulation.

(3) Exceptions to specific criteria in 401 KAR 5:031 that apply to particular surface waters are shown in the tables of surface water use designations in this section. All other criteria in 401 KAR 5:031 applicable to the listed use designations shall apply to these surface waters.

SURFACE WATER USE DESIGNATIONS				
Stream	Zone	County	Use Designation	Exceptions to Specific Criteria
BIG SANDY RIVER BASIN				
Big Sandy River	River Mile 26.8 to Ohio River	Boyd	WAH, PCR, SCR	
Hood Creek	Source to Wheeler Branch	Lawrence	WAH, PCR, SCR	
Levisa Fork of Big Sandy River	Kentucky-Virginia State Line to River Mile 147.5 (Headwaters of Fishtrap Lake)	Pike	WAH, PCR, SCR, DWS	
Levisa Fork of Big Sandy River	River Mile 126.6 (Fishtrap Lake Dam) to Big Sandy River	Lawrence	WAH, PCR, SCR, DWS	
Paint Creek of Levisa Fork	River Mile 8.3 (Paintsville Lake Dam) to Levisa Fork	Johnson	CAH, PCR, SCR	
Russell Fork of Big Sandy River	Kentucky-Virginia State Line (River Mile 15.9) to Levisa Fork	Pike	WAH, PCR, SCR, DWS	
Tug Fork of Big Sandy River	Kentucky-Virginia State Line (River Mile 94.0) to Big Sandy River	Lawrence	WAH, PCR, SCR, DWS	
LAKES AND RESERVOIRS				
Dewey	Entire reservoir	Floyd	WAH, PCR, SCR, DWS	
Fishtrap	Entire reservoir	Pike	WAH, PCR, SCR, DWS	
Paintsville	Entire reservoir	Johnson	WAH, CAH, PCR, SCR	
LITTLE SANDY RIVER BASIN				
Big Caney Creek	Source to Grayson Lake	Elliott	CAH, PCR, SCR	
Big Sinking Creek	River Mile 6.0 to Little Sandy River	Carter	WAH, PCR, SCR	
Laurel Creek	Source to Little Sandy River	Elliott	CAH, PCR, SCR	
Little Sandy River	Source to River Mile 71.1 (Headwaters of Grayson Lake)	Elliott	WAH, PCR, SCR, DWS	
Little Sandy River	River Mile 50.0 (Grayson Lake Dam) to Ohio River	Greenup	WAH, PCR, SCR, DWS	
LAKES AND RESERVOIRS				
Grayson	Entire Reservoir	Carter	WAH, PCR, SCR	
Greenbo	Entire Reservoir	Greenup	WAH, CAH, PCR, SCR, DWS	

TYGARTS CREEK BASIN				
Buffalo Creek	Source to Tygarts Creek	Carter	WAH, PCR, SCR	
Little White Oak Creek	Source to Tygarts Creek	Greenup	WAH, PCR, SCR	
Tygarts Creek	Source to Ohio River	Greenup	WAH, PCR, SCR, DWS	
White Oak Creek	Source to Tygarts Creek	Greenup	WAH, PCR, SCR	
LICKING RIVER BASIN				
Burning Fork	Basin	Magoffin	WAH, PCR, SCR	
Craney Creek	Source to North Fork of Licking River	Rowan/ Morgan	CAH, PCR, SCR	
Fleming Creek	Source to Licking River	Nicholas	WAH, PCR, SCR	
Licking River	Source to River Mile 218.2 (Headwaters of Cave Run Lake)	Morgan	WAH, PCR, SCR, DWS	
Licking River	River Mile 176.8 (Cave Run Lake Dam) to River Mile 169.6 (U.S. Highway 60 Bridge)	Bath/ Rowan	CAH, PCR, SCR, DWS	
Licking River	River Mile 169.6 to River Mile 165.0	Bath/ Rowan	WAH, PCR, SCR, DWS	
Licking River	River Mile 165.0 to River Mile 154.5	Bath/ Rowan	WAH, PCR, SCR, OSRW	
Licking River	River Mile 154.5 to River Mile 115.0	Nicholas/ Bourbon	WAH, PCR, SCR, DWS	
Licking River	River Mile 115.0 to River Mile 18.9	Kenton/ Campbell	WAH, PCR, SCR, DWS, OSRW	
Licking River	River Mile 18.9 to Ohio River	Kenton/ Campbell	WAH, PCR, SCR, DWS	
North Fork of Licking River	Source to Licking River	Pendleton/ Bracken	WAH, PCR, SCR, DWS	
Slabcamp Creek	Basin including Stonecoal Branch	Rowan	CAH, PCR, SCR	
Slate Creek	Source to Licking River	Bath	WAH, PCR, SCR, DWS	
South Fork of Licking River	River Mile 65.1 to Licking River	Pendleton	WAH, PCR, SCR, DWS	
LAKES AND RESERVOIRS				
Cave Run	Entire Reservoir	Rowan/ Bath	WAH, PCR, SCR	
KENTUCKY RIVER BASIN				
Bailey Run	Basin	Anderson	WAH, PCR, SCR	
Buck Lick Branch	Basin	Lee	WAH, PCR, SCR	
Cedar Brook	Basin	Anderson	WAH, PCR, SCR	
Chimney Top Creek	Basin	Wolfe	CAH, PCR, SCR	

Clarks Run	Source to Herrington Lake	Boyle	WAH, PCR, SCR	
Dix River	Source to River Mile 33.1 (Headwaters of Herrington Lake)	Boyle/ Garrard	WAH, PCR, SCR	
Dix River	Herrington Lake Dam to Kentucky River	Garrard/ Mercer	CAH, PCR, SCR	
East Fork of Indian Creek	Source to Indian Creek	Meniffee	CAH, PCR, SCR	
Gladie Creek	Basin	Meniffee	CAH, PCR, SCR	
Hanging Fork Creek	Source to Dix River	Boyle/ Lincoln	WAH, PCR, SCR	
Indian Creek	River Mile 5.2 to River Mile 1.2	Meniffee	CAH, PCR, SCR	
Kentucky River	River Mile 254.8 to Ohio River	Carroll	WAH, PCR, SCR, DWS	
Middle Fork of Kentucky River	Source to River Mile 76.6 (Headwaters of Buckhorn Lake)	Leslie	WAH, PCR, SCR	
Middle Fork of Kentucky River	River Mile 43.2 (Buckhorn Lake Dam) to North Fork of Kentucky River	Lee	WAH, PCR, SCR	
Middle Fork of Red River	Source to River Mile 10.6	Powell	CAH, PCR, SCR	
North Fork of Kentucky River	Source to Kentucky River	Lee	WAH, PCR, SCR, DWS	
Parched Corn Creek	Source to Red River	Wolfe	CAH, PCR, SCR	
Red River	Source to River Mile 68.6	Meniffee/ Wolfe	WAH, PCR, SCR	
Red River	River Mile 68.6 to River Mile 49.2	Meniffee/ Wolfe	WAH, PCR, SCR, OSRW	
Red River	River Mile 49.2 to Kentucky River	Clark/ Estill	WAH, PCR, SCR, DWS	
Ross Creek	Source to Kentucky River	Lee	WAH, PCR, SCR	
Silver Creek	Source to Kentucky River	Madison	WAH, PCR, SCR	
South Fork of Elkhorn Creek	Source to North Fork of Elkhorn Creek	Franklin	WAH, PCR, SCR	
South Fork of Kentucky River	Source to Kentucky River	Lee	WAH, PCR, SCR, DWS	
Swift Camp Creek	Source to Red River	Wolfe	CAH, PCR, SCR	
Town Branch	Source to South Fork of Elkhorn Creek	Fayette	WAH, PCR, SCR	

War Fork of Station Camp Creek	Source to River Mile 8.5	Jackson	WAH, PCR, SCR	
War Fork of Station Camp Creek	River Mile 8.5 to River Mile 2.0	Jackson	CAH, PCR, SCR	
War Fork of Station Camp Creek	River Mile 2.0 to Station Camp Creek	Jackson	WAH, PCR, SCR	
<b>LAKES AND RESERVOIRS</b>				
Bert Combs	Entire Reservoir	Clay	WAH, CAH, PCR, SCR, DWS	
Buckhorn	Entire Reservoir	Perry	WAH, PCR, SCR, DWS	
Carr Fork	Entire Reservoir	Knott/ Perry	WAH, PCR, SCR	
Fishpond	Entire Reservoir	Letcher	WAH, CAH, PCR, SCR	
Herrington	Entire Reservoir	Garrard/ Mercer	WAH, PCR, SCR, DWS	
Mill Creek	Entire Reservoir	Wolfe	WAH, CAH, PCR, SCR, DWS	
<b>SALT RIVER BASIN</b>				
Beech Fork of Salt River	Source to Salt River	Hardin/ Bullitt	WAH, PCR, SCR, DWS	
Chenoweth Run	Source to Floyds Fork	Jefferson	WAH, PCR, SCR	
Currys Fork	Confluence of South and North Forks to Floyds Fork	Oldham	WAH, PCR, SCR	
Floyds Fork	Source to Salt River	Bullitt	WAH, PCR, SCR	
Mill Creek	Source to Salt River	Bullitt	WAH, PCR, SCR	
North Fork of Currys Fork	Source to South Fork of Currys Fork	Oldham	WAH, PCR, SCR	
Rolling Fork of Salt River	Source to Salt River	Bullitt	WAH, PCR, SCR, DWS	
Salt River	Source to River Mile 74.8 (Headwaters of Taylorsville Lake)	Anderson	WAH, PCR, SCR, DWS	
Salt River	River Mile 60.1 (Taylorsville Lake Dam) to Ohio River	Hardin/ Jefferson	WAH, PCR, SCR, DWS	
Unnamed tributary to Mill Creek	Source to Mill Creek at River Mile 11.8	Bullitt	WAH, PCR, SCR	
<b>LAKES AND RESERVOIRS</b>				
Taylorsville	Entire Reservoir	Spencer	WAH, PCR, SCR	

GREEN RIVER BASIN				
Barren River	Source to River Mile 118.5 (Headwaters of Barren River Lake)	Allen	WAH, PCR, SCR	
Barren River	River Mile 79.1 (Barren River Lake Dam) to River Mile 15.0	Warren	WAH, PCR, SCR, DWS	
Barren River	River Mile 15.0 to Green River	Butler/ Warren	WAH, PCR, SCR, OSRW	
Beaverdam Creek	Source to Green River	Edmonson	CAH, PCR, SCR	
Big Pitman Creek	Source to Green River	Green	WAH, PCR, SCR	
Black Lick Creek	Source to Clear Fork	Logan	WAH, PCR, SCR, DWS	
Buck Horn Creek	Source to Little Pitman Creek	Taylor	WAH, PCR, SCR	
Buffalo Creek	Source to Green River (in Mammoth Cave National Park)	Edmonson	WAH, PCR, SCR	
Cypress Creek	Source to Pond River	McLean	WAH, PCR, SCR	
Drakes Creek	Confluence of West Fork and Middle Fork to Barren River	Warren	WAH, PCR, SCR	
Gasper River	Source to Barren River	Warren	WAH, PCR, SCR	
Green River	Source to River Mile 340.1 (Headwaters of Green River Lake)	Adair	WAH, PCR, SCR, DWS	
Green River	River Mile 305.6 (Green River Lake Dam) to River Mile 207.8	Hart	WAH, PCR, SCR, OSRW, DWS	
Green River	River Mile 207.8 to River Mile 181.7	Edmonson	WAH, PCR, SCR, OSRW	
Green River	River Mile 181.7 to River Mile 168.0	Butler/ Warren	WAH, PCR, SCR, DWS	
Green River	River Mile 168.0 to River Mile 148.0	Butler	WAH, PCR, SCR, OSRW	
Green River	River Mile 148.0 to Ohio River	Henderson	WAH, PCR, SCR, DWS	
Lick Creek	Source to West Fork of Drakes Creek	Simpson	CAH, PCR, SCR	
Little Pitman Creek	Source to Big Pitman Creek	Green	WAH, PCR, SCR	
Lynn Camp Creek	Source to Green River	Hart	CAH, PCR, SCR	
Middle Pitman Creek	Source to Big Pitman Creek	Green	WAH, PCR, SCR	

Underground River System	Mammoth Cave National Park	Edmonson/ Hart/ Barren	CAH, PCR, SCR, OSRW	
Turnhole Spring	Basin Outside Mammoth Cave National Park Boundary	Edmonson/ Barren	CAH, PCR, SCR, OSRW	
Echo River	Basin Outside Mammoth Cave National Park Boundary	Edmonson	CAH, PCR, SCR, OSRW	
Pike Spring	Basin Outside Mammoth Cave National Park Boundary	Edmonson	CAH, PCR, SCR, OSRW	
Mile 205.7 Spring	Basin Outside Mammoth Cave National Park Boundary	Hart	CAH, PCR, SCR, OSRW	
McCoy Spring	Basin Outside Mammoth Cave National Park Boundary	Hart	CAH, PCR, SCR, OSRW	
Suds Spring	Basin Outside Mammoth Cave National Park Boundary	Hart/ Barren	CAH, PCR, SCR, OSRW	
Double Sink Spring	Basin Outside Mammoth Cave National Park Boundary	Edmonson/ Barren	CAH, PCR, SCR, OSRW	
Ganter Spring	Basin Outside Mammoth Cave National Park Boundary	Edmonson	CAH, PCR, SCR, OSRW	
Running Spring	Basin Outside Mammoth Cave National Park Boundary	Edmonson	CAH, PCR, SCR, OSRW	
Mud River	Source to Green River	Butler/ Muhlenberg	WAH, PCR, SCR	
Nolin River	Source to River Mile 64.3 (Headwaters of Nolin Lake)	Hart/ Grayson	WAH, PCR, SCR	
Nolin River	River Mile 7.6 (Nolin Lake Dam) to Green River	Edmonson	WAH, PCR, SCR	
Rough River	Source to River Mile 133.8 (Headwaters of Rough River Lake)	Hardin	WAH, PCR, SCR, DWS	
Rough River	River Mile 89.3 (Rough River Lake Dam) to River Mile 72.4	Ohio/ Grayson	WAH, PCR, SCR, DWS	
Rough River	River Mile 72.4 to Green River	McLean/ Ohio	WAH, PCR, SCR, DWS	
Roundstone Creek	Source to Hwy 1140 (River Mile 3.5)	Hart	CAH, PCR, SCR	

Sharp's Branch	Source to West Fork of Drakes Creek	Simpson	WAH, PCR, SCR	
Trammel Fork	River Mile 30.15 (Kentucky/Tennessee State Line) to Hwy 31E (River Mile 23.6)	Allen	CAH, PCR, SCR	
Trammel Fork	River Mile 23.6 to Drakes Creek	Warren	WAH, PCR, SCR	
West Fork of Drakes Creek	Source to Confluence with Middle Fork of Drakes Creek	Warren	WAH, PCR, SCR, DWS	
Wiggington Creek	Source to Gasper River	Logan	WAH, PCR, SCR	
<b>LAKES AND RESERVOIRS</b>				
Barren River	Entire Reservoir	Barren/Allen	WAH, PCR, SCR, DWS	
Green River	Entire Reservoir	Taylor	WAH, PCR, SCR, DWS	
Nolin	Entire Reservoir	Edmonson	WAH, PCR, SCR, DWS	
Rough River	Entire Reservoir	Breckinridge/Grayson	WAH, PCR, SCR, DWS	
<b>LOWER CUMBERLAND RIVER BASIN</b>				
Casey Creek	Source to Little River	Trigg	CAH, PCR, SCR	
Cumberland River	River Mile 30.8 (Lake Barkley Dam) to Ohio River	Livingston	WAH, PCR, SCR, DWS	
Skinframe Creek	Source to Livingston Creek	Lyon	CAH, PCR, SCR	
Sulphur Spring Creek	Source to Red River	Simpson	CAH, PCR, SCR	
West Fork of Red River	River Mile 32.2 to Kentucky/Tennessee State Line (River Mile 14.5)	Christian	CAH, PCR, SCR	
Whipporwill Creek	Source to Red River	Logan	WAH, PCR, SCR, OSRW	
<b>LAKES AND RESERVOIRS</b>				
Barkley	Entire Reservoir from Kentucky/Tennessee State Line (River Mile 74.7)	Lyon/Livingston	WAH, PCR, SCR, DWS	
<b>TENNESSEE RIVER BASIN</b>				
Tennessee River	River Mile 22.4 (Kentucky Lake Dam) to River Mile 12.0	Livingston/McCracken	WAH, PCR, SCR, OSRW	

Tennessee River	River Mile 12.0 to Ohio River	Livingston/ McCracken	WAH, PCR, SCR, DWS	
<b>LAKES AND RESERVOIRS</b>				
Kentucky	Entire Reservoir from Kentucky/ Tennessee State Line (River Mile 62.4)	Livingston/ Marshall	WAH, PCR, SCR, DWS	
<b>TRADEWATER RIVER BASIN</b>				
Crab Orchard Creek/Vaughn Ditch	Source to Tradewater River	Webster	WAH, PCR, SCR	
Montgomery Creek	Source to Tradewater River	Caldwell	WAH, PCR, SCR	
Tradewater River	Source to Ohio River	Crittenden/ Union	WAH, PCR, SCR	
<b>OHIO RIVER BASIN (Main Stem and Minor Tributaries)</b>				
Doe Run Creek	Source to Hwy 1628 (River Mile 5.15)	Meade	CAH, PCR, SCR	
Ohio River	Big Sandy River (River Mile 317.1) to River Mile 848.0	Union	WAH, PCR, SCR, DWS	
Ohio River	River Mile 848.0 to River Mile 850.0	Union	WAH, PCR, SCR, OSRW	
Ohio River	River Mile 850.0 to River Mile 859.0	Union	WAH, PCR, SCR	
Ohio River	River Mile 859.0 to River Mile 861.0	Union	WAH, PCR, SCR, OSRW	
Ohio River	River Mile 861.0 to River Mile 865.0	Union	WAH, PCR, SCR	
Ohio River	River Mile 865.0 to River Mile 867.0	Union	WAH, PCR, SCR, OSRW	
Ohio River	River Mile 867.0 to River Mile 940.7	McCracken	WAH, PCR, SCR	
Ohio River	River Mile 940.7 to River Mile 943.3	McCracken	WAH, PCR, SCR, DWS, OSRW	
Ohio River	River Mile 943.3 to River Mile 948.2	McCracken	WAH, PCR, SCR, DWS	
Ohio River	River Mile 948.2 to River Mile 949.5	Ballard	WAH, PCR, SCR, DWS, OSRW	
Ohio River	River Mile 949.5 to River Mile 966.3	Ballard	WAH, PCR, SCR, DWS	
Ohio River	River Mile 966.3 to River Mile 969.5	Ballard	WAH, PCR, SCR, DWS, OSRW	
Ohio River	River Mile 969.5 to Mississippi River	Ballard	WAH, PCR, SCR, DWS	

Ohio River	River Mile 922.0 to River Mile 923.5 (Channel East of Towhead Island)	Livingston	WAH, PCR, SCR, OSRW	
Paddy's Run	Source to Ohio River	Jefferson	PCR, SCR	401 KAR 5:031, Section 2(1)(d) and (2) do not apply.
Sinking Creek	Source to Hwy 259 (River Mile 4.0)	Breckinridge	CAH, PCR, SCR	
White Oak Creek	River Mile 1.08 to Ohio River	Greenup	SCR	401 KAR 5:031, Section 2(1)(d) and (2) do not apply.
<b>LAKES AND RESERVOIRS</b>				
Metropolis	Entire Lake	McCracken	WAH, PCR, SCR, OSRW	
Swan	Entire Lake	Ballard	WAH, PCR, SCR, OSRW	
<b>MISSISSIPPI RIVER BASIN (Main Stem and Minor Tributaries)</b>				
Bayou de Chien	Source to River Mile 13.0	Hickman	WAH, PCR, SCR, OSRW	
Cane Creek of Bayou de Chien	Basin	Graves	WAH, PCR, SCR, OSRW	
Jackson Creek	Basin	Graves	WAH, PCR, SCR, OSRW	
Sand Creek	Basin	Graves	WAH, PCR, SCR, OSRW	
South Fork of Bayou de Chien	Basin	Graves	WAH, PCR, SCR, OSRW	
Mississippi River	Confluence with Ohio River to River Mile 947.0	Carlisle	WAH, PCR, SCR	
Mississippi River	River Mile 947.0 to River Mile 945.0	Carlisle	WAH, PCR, SCR, OSRW	
Mississippi River	River Mile 945.0 to Kentucky/Tennessee State Line	Fulton	WAH, PCR, SCR	
Murphy's Pond	Entire Pond and Preserve Area	Hickman	WAH, PCR, SCR, OSRW	
<b>UPPER CUMBERLAND RIVER BASIN</b>				
Adams Branch	Basin	Whitley	WAH, PCR, SCR, OSRW	
Archers Creek	Basin	Whitley	WAH, PCR, SCR, OSRW	
Bad Branch	Basin	Letcher	CAH, PCR, SCR, OSRW	
Bark Camp Creek	Basin	Whitley	CAH, PCR, SCR	
Beaver Creek	Basin	McCreary	CAH, PCR, SCR, OSRW	

Beaver Creek	Source to Lake Cumberland	Wayne	WAH, PCR, SCR	
Beck's Creek	Basin	Whitley	WAH, PCR, SCR	
Bens Fork of Little Clear Creek	Basin	Bell	WAH, PCR, SCR, OSRW	
Big Branch	Basin above River Mile 0.8	McCreary	WAH, PCR, SCR, OSRW	
Big Lick Branch	Basin	Pulaski	WAH, PCR, SCR, OSRW	
Big South Fork of Cumberland River	River Mile 55.2 to River Mile 45.0	McCreary	WAH, PCR, SCR, OSRW	
Blacksnake Branch	Basin	Bell	WAH, PCR, SCR, OSRW	
Breeden's Creek	Basin	Harlan	WAH, PCR, SCR, OSRW	
Brices Creek	Basin	Knox	WAH, PCR, SCR, OSRW	
Brownies Creek	Basin to River Mile 10.0	Harlan	WAH, PCR, SCR, OSRW	
Buck Creek	River Mile 53.3 to River Mile 10.5	Pulaski	WAH, PCR, SCR, OSRW	
Buck Creek	Basin	Whitley	WAH, PCR, SCR, OSRW	
Bucks Branch	Basin	Whitley	WAH, PCR, SCR, OSRW	
Buffalo Creek	Basin to Kentucky/Tennessee State Line (River Mile 3.2)	Whitley	WAH, PCR, SCR, OSRW	
Bunches Creek	Basin	Whitley	CAH, PCR, SCR, OSRW	
Campbell Branch	Basin	Whitley	WAH, PCR, SCR, OSRW	
Cane Creek	Basin	Laurel	WAH, PCR, SCR	
Caney Creek	Basin	Bell	WAH, PCR, SCR, OSRW	
Cannon Creek	Basin above Cannon Creek Lake	Bell	WAH, PCR, SCR, OSRW	
Clover Bottom Creek	River Mile 1.4 to Horselick Creek	Jackson	CAH, PCR, SCR	
Cogur Fork	Basin	McCreary	CAH, PCR, SCR	
Coles Branch	Basin	Knox	WAH, PCR, SCR, OSRW	
Colliers Creek	Basin	Bell	WAH, PCR, SCR, OSRW	
Criscillis Branch	Basin	Whitley	WAH, PCR, SCR, OSRW	

Cumberland River	River Mile 694.2 to River Mile 574.6	Whitley	WAH, PCR, SCR, DWS	
Cumberland River	River Mile 574.6 to River Mile 558.5 (Headwaters of Lake Cumberland)	McCreary/Whitley	WAH, PCR, SCR, OSRW	
Cumberland River	River Mile 460.9 (Lake Cumberland Dam) to Kentucky/Tennessee State Line (River Mile 401.05)	Monroe	CAH, PCR, SCR, DWS	
Davis Branch	Basin	Bell	WAH, PCR, SCR, OSRW	
Difficulty Creek	Basin	McCreary	WAH, PCR, SCR	
Dog Slaughter Creek	Basin	Whitley	CAH, PCR, SCR, OSRW	
Eagle Creek	Basin	McCreary	WAH, PCR, SCR, OSRW	
Four Mile Creek	Basin above River Mile 2.5	Bell	WAH, PCR, SCR, OSRW	
Four Mile Run	Basin above River Mile 1.0	Bell	WAH, PCR, SCR, OSRW	
Fugitt Creek	Basin	Harlan	CAH, PCR, SCR	
Hale Fork	Basin	Knox	WAH, PCR, SCR, OSRW	
Hawk Creek	Basin	Laurel	CAH, PCR, SCR	
Hinkle Branch	Basin	Knox	WAH, PCR, SCR, OSRW	
Honeycutt Branch	Basin	Knox	WAH, PCR, SCR, OSRW	
Horse Lick Creek	River Mile 12.3 to Middle Fork of Rockcastle River	Jackson/Rockcastle	WAH, PCR, SCR, OSRW	
Hunting Shirt Branch	Basin	Knox	WAH, PCR, SCR, OSRW	
Indian Creek	Source to Barren Fork	McCreary	CAH, PCR, SCR	
Jennys Branch	Basin	McCreary	WAH, PCR, SCR, OSRW	
Kelly Branch	Basin	Harlan	WAH, PCR, SCR	
Kennedy Creek	River Mile 1.0 to Little South Fork of Cumberland River	Wayne	WAH, PCR, SCR, OSRW	
Kilburn Fork of Indian Creek	Basin	McCreary	WAH, PCR, SCR, OSRW	

Laurel Creek of Marsh Creek	River Mile 9.0 to River Mile 3.4	McCreary	CAH, PCR, SCR, OSRW	
Laurel Fork	Source to Middle Fork of Rockcastle River	Jackson	WAH, PCR, SCR, OSRW	
Laurel Fork of Clear Fork	Basin above River Mile 16.0	Bell	WAH, PCR, SCR, OSRW	
Laurel Fork of Clear Fork	River Mile 16.0 to River Mile 4.25 (Kentucky/Tennessee State Line)	Whitley	WAH, PCR, SCR, OSRW	
Laurel Fork of Indian Creek	Basin	McCreary	WAH, PCR, SCR, OSRW	
Laurel River	Laurel River Lake Dam (River Mile 2.1) to River Mile 0.9	Laurel	CAH, PCR, SCR	
Lick Fork	Basin	Bell	WAH, PCR, SCR, OSRW	
Little Clear Creek	Basin from Confluence with Fuson Branch	Bell	WAH, PCR, SCR	
Little Popular Creek	Basin above and including East Ridge Branch	Knox	WAH, PCR, SCR, OSRW	
Little South Fork of Cumberland River	River Mile 35.6 to River Mile 4.1	Wayne	WAH, PCR, SCR, OSRW	
Little Yellow Creek	River Mile 3.2 (Fern Lake Dam) to Yellow Creek	Bell	WAH, PCR, SCR	
Long Branch	Basin	Bell	WAH, PCR, SCR, OSRW	
Looney Creek	Basin above River Mile 5.3	Harlan	CAH, PCR, SCR	
Marsh Creek	Basin above River Mile 24.0	McCreary	WAH, PCR, SCR, OSRW	
Marsh Creek	River Mile 24.0 to confluence with Cumberland River	McCreary	WAH, PCR, SCR, OSRW	
Martins Fork	Basin above River Mile 31.3	Harlan	CAH, PCR, SCR	
Martin's Fork	River Mile 31.3 to River Mile 27.4	Harlan	CAH, PCR, SCR, OSRW	
Meadow Fork	Basin	Letcher	WAH, PCR, SCR, OSRW	
Middle Fork of Rockcastle River	River Mile 61.1 to River Mile 53.3	Jackson	WAH, PCR, SCR, OSRW	
Mill Branch	Basin	Knox	WAH, PCR, SCR, OSRW	

Mill Creek of Straight Creek	Basin	Bell	WAH, PCR, SCR, OSRW	
Mill Creek	Basin	McCreary	WAH, PCR, SCR, OSRW	
Moore's Creek	Basin	Knox	WAH, PCR, SCR, OSRW	
Mud Creek	Basin above River Mile 6.5	Whitley	WAH, PCR, SCR, OSRW	
Mud Lick	Basin	Knox	WAH, PCR, SCR, OSRW	
Ned Branch	Basin	Laurel	WAH, PCR, SCR, OSRW	
Patterson Creek	Basin above River Mile 7.4	Whitley	WAH, PCR, SCR, OSRW	
Poor Fork of Cumberland River	Basin above River Mile 742.5	Letcher	CAH, PCR, SCR, OSRW	
Poor Fork of Cumberland River	River Mile 742.5 to Jefferson National Forest Boundary (River Mile 720.55)	Harlan	WAH, PCR, SCR	
Poor Fork of Cumberland River	River Mile 720.55 to Clover Fork of Cumberland River	Harlan	WAH, PCR, SCR, DWS	
Razor Fork	Basin	Harlan	WAH, PCR, SCR	
Richland Creek	Basin above River Mile 15.7	Knox	WAH, PCR, SCR, OSRW	
Roaring Fork	Basin	Knox	WAH, PCR, SCR, OSRW	
Rock Creek	Kentucky /Tennessee State Line (River Mile 21.9) to White Oak Creek	McCreary	CAH, PCR, SCR, OSRW	
Rock Creek	Basin from confluence with Jellico Creek	McCreary	WAH, PCR, SCR, OSRW	
Rockcastle River	River Mile 53.3 to River Mile 8.5	Laurel/ Pulaski	WAH, PCR, SCR, OSRW	
Ross Branch	Basin	Whitley	WAH, PCR, SCR, OSRW	
Roundstone Creek	Source to River Mile 13.5	Rockcastle	WAH, PCR, SCR	
Roundstone Creek	River Mile 13.5 to River Mile 4.7	Rockcastle	WAH, PCR, SCR, OSRW	
Roundstone Creek	River Mile 4.7 to Rockcastle River	Rockcastle	WAH, PCR, SCR, DWS	
Ryans Creek	Basin	Whitley	WAH, PCR, SCR, OSRW	

Sanders Creek	Basin	Whitley	WAH, PCR, SCR, OSRW	
Shillalah Creek	Source to Cumberland Gap National Historical Park Boundary	Bell	CAH, PCR, SCR	
Shut-in Branch	Basin	McCreary	WAH, PCR, SCR, OSRW	
Sinking Creek	Source to Rockcastle River	Laurel	WAH, PCR, SCR, OSRW	
Sims Fork	Basin	Bell	WAH, PCR, SCR, OSRW	
Smith Creek	Basin	Letcher	WAH, PCR, SCR, OSRW	
South Fork of Rockcastle River	River Mile 2.1 to Rockcastle River	Rockcastle	WAH, PCR, SCR, OSRW	
Stevenson Branch	Basin	Bell	WAH, PCR, SCR, OSRW	
Straight Creek	Basin	Harlan	WAH, PCR, SCR	
Sugar Run	Source to Cumberland Gap National Historical Park Boundary	Bell	WAH, PCR, SCR	
Trace Branch	Basin	Knox	WAH, PCR, SCR, OSRW	
Trammel Fork	Basin	McCreary	WAH, PCR, SCR, OSRW	
Troublesome Creek	Basin	McCreary	WAH, PCR, SCR	
Turkey Creek	Basin	Knox	WAH, PCR, SCR, OSRW	
Watts Creek	Basin above Camp Blanton Lake	Harlan	WAH, PCR, SCR, OSRW	
White Oak Creek	Basin above River Mile 1.2 (includes Little White Oak Creek)	Laurel	CAH, PCR, SCR	
Wood Creek	River Mile 4.0 (Wood Creek Lake Dam) to Hazel Patch Creek	Laurel	CAH, PCR, SCR	
Yellow Creek	Source to Cumberland River	Bell	WAH, PCR, SCR	
Youngs Creek	Basin	Whitley	WAH, PCR, SCR, OSRW	
<b>LAKES AND RESERVOIRS</b>				
Beulah(=Tyner)	Entire Reservoir	Jackson	WAH, CAH, PCR, SCR, DWS	
Cannon Creek	Entire Reservoir	Bell	WAH, CAH, PCR, SCR, DWS	

Cumberland	Entire Reservoir	Pulaski	WAH, PCR, SCR, DWS	
Dale Hollow	Entire portion of Reservoir within Kentucky	Clinton/ Cumberland	WAH, PCR, SCR, DWS	
Laurel River	Entire Reservoir	Laurel/ Whitley	WAH, CAH, PCR, SCR, DWS	
Martins Fork	Entire Reservoir	Harlan	WAH, PCR, SCR	
Wood Creek	Entire Reservoir	Laurel	WAH, CAH, PCR, SCR, DWS	

#### **Section 6. Incorporation by Reference.**

(1) "Interim Economic Guidance for Water Quality Standards Workbook", EPA, March 1995, Publication EPA-823-B-95-002. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., is incorporated by reference.

(2) This material may be inspected, copied, or obtained at the Kentucky Division of Water, 14 Reilly Road, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m. (last update 26 Ky. R. 1131, eff. 12-8-99.)

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
 Department for Environmental Protection  
 Division of Water

**401 KAR 5:029. General provisions.**

RELATES TO: KRS 146.200 to 146.360, 146.410 to 146.535, 146.550 to 146.570, 146.600 to 146.619, 146.990, 224.01-100, 224.01-400, 224.16-050, 224.16-070, 224.40 to 224.43, 224.46, 224.50, 224.60, 224.70, 224.71, 224.73, 40 C.F.R. Part 136

STATUTORY AUTHORITY: KRS 146.220, 146.241, 146.270, 146.410, 146.450, 146.460, 146.465, 224.10-100, 224.16-050, 224.16-060, 224.70-100, 224.70-110, 40 C.F.R. Part 131, 136, 33 U.S.C. 1311, 1312, 1313, 1314, 1316, 1341

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to develop and conduct a comprehensive program for the management of water resources and to provide for the prevention, abatement, and control of water pollution. This administrative regulation and 401 KAR 5:002, 5:026, 5:030, and 5:031 establish procedures to protect the surface waters of the Commonwealth, and thus protect water resources. This administrative regulation establishes the Commonwealth's surface water antidegradation policy, provides for withdrawals of waters not meeting water quality standards, and addresses sample collection and analytical methodology, mixing zones, and variances for coal remining operations.

**Section 1. Antidegradation Policy.**

(1) The purpose of 401 KAR 5:026 to 401 KAR 5:031 is to safeguard the surface waters of the Commonwealth for their designated uses, to prevent the creation of any new pollution of these waters, and to abate any existing pollution.

(2) Where the quality of surface waters exceeds that necessary to support propagation of fish, shellfish, wildlife and recreation in and on the water, that quality shall be maintained and protected unless the cabinet finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the cabinet's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. For point source discharges, water quality shall be maintained and protected in these waters according to the procedures specified in 401 KAR 5:030, Section 1(3). In allowing degradation or lower water quality, the cabinet shall assure water quality adequate to protect existing uses fully. Further, the cabinet shall assure that there shall be achieved the highest statutory and regulatory requirements for waste treatment by all new and existing point sources and that nonpoint sources of pollutants be controlled by application of all cost effective and reasonable best management practices.

(3) Water quality shall be maintained and protected in a water categorized as an outstanding national resource water according to the procedures specified in 401 KAR 5:030, Section 1(2).

(4) Water quality shall be maintained and protected in those waters designated as outstanding state resource waters according to the procedures specified in 401 KAR 5:031, Section 7.

(5) If potential water quality impairment associated with a thermal discharge is involved, a successful demonstration conducted under Section 316 of the Clean Water Act, 33 U.S.C. 1326, shall be in compliance with this section.

**Section 2. Withdrawal of Contaminated Water.** Surface waters may, on occasion, not meet the criteria established in 401 KAR 5:031. Withdrawal and subsequent discharge of these waters without alteration of the physical or chemical characteristics into the same or similar surface water shall not be considered a violation of water quality standards. The cabinet shall determine KPDES permit limitations in these situations based on the quality of the raw and receiving waters. The cabinet retains the right to require permit modification under the provisions of 401 KAR 5:035, 401 KAR 5:065, 401 KAR 5:070, 401 KAR 5:075, and 401 KAR 5:080.

**Section 3. Sample Collection and Analytical Methodology.** All methods of preservation and analysis used to determine conformity or nonconformity with water quality standards shall be governed by 40 C.F.R. Part 136, as amended, if applicable. Sample collection and other methods not found in the above reference may be used where appropriate if they:

- (1) Meet commonly accepted quality assurance and quality control principles;
- (2) Are within the accuracy required for determining conformity or nonconformity with water quality standards; and
- (3) Receive prior written approval by the cabinet.

**Section 4. Mixing Zones.** The following requirements shall apply to a mixing zone:

(1) The cabinet may assign definable geometric limits for mixing zones for a discharge or a pollutant or pollutants within a discharge. Applicable limits shall include the linear distances from the point of discharge, surface area involvement, volume of receiving water, and shall take into account other nearby mixing zones. Dilution provided by assigned mixing zones shall not be allowed until applicable limits are assigned by the cabinet in accordance with this section.

(2) Concentrations of toxic substances that exceed the acute criteria for protection of aquatic life in 401 KAR 5:031 shall not exist within an assigned mixing zone or in the discharge itself unless a zone of initial dilution is assigned. A zone of initial dilution may be assigned pursuant to subsection (3) of this section. Chronic criteria for the protection of aquatic life and criteria for the protection of human health from the consumption of fish tissue shall be met at the edge of the assigned mixing zone.

(3) The following requirements shall apply to a zone of initial dilution:

(a) The cabinet shall require an applicant to provide a technical evaluation for a zone of initial dilution;

(b) Concentrations of toxic substances shall not exceed the acute criteria for the protection of aquatic life at the edge of the assigned zone of initial dilution, however, numeric acute criteria may be exceeded within the zone if the frequency and duration of exposure of aquatic organisms are not sufficient to cause acute toxicity; and

(c) Unless assigned on or before the effective date of this administrative regulation, a zone of initial dilution for a pollutant shall not be allowed in an exceptional water.

(4) Unless assigned on or before the effective date of this administrative regulation, a zone of

initial dilution for a pollutant shall be available only to a submerged high-rate multiport outfall structure and shall be limited in size to the most restrictive of the following:

(a) The acute criteria shall be met within ten (10) percent of the distance from the edge of the outfall structure to the edge of the regulatory mixing zone in a spatial direction;

(b) The acute criteria shall be met within a distance of fifty (50) times the square root of the cross-sectional area of a discharge port, in a spatial direction; or

(c) The acute criteria shall be met in a horizontal direction within a distance of five (5) times the natural water depth that prevails under mixing zone design conditions, and exists before the installation of a discharge outlet.

(5) The location of a mixing zone shall not interfere with fish spawning or nursery areas, fish migration routes, public water supply intakes, or bathing areas, nor preclude the free passage of fish or other aquatic life.

(6) Unless assigned on or before the effective date of this administrative regulation, an assigned mixing zone, from the point of discharge in a spatial direction, shall not exceed one-third ( $1/3$ ) of the width of the receiving stream or one-half ( $1/2$ ) of the cross-sectional area.

(7) In a lake or a reservoir, unless assigned on or before the effective date of this administrative regulation, an assigned mixing zone, from the point of discharge in any spatial direction, shall not exceed one-tenth ( $1/10$ ) of the width of the lake, or reservoir at the discharge point.

(8) An assigned mixing zone shall be limited to an area or volume which will not adversely affect the designated uses of the receiving water, nor be so large as to adversely affect an established community of aquatic organisms.

(9) For thermal discharges, a successful demonstration conducted under Section 316(a) of the Clean Water Act shall constitute compliance with this section.

#### **Section 5. Water Quality-based Variance for Coal Remining Operations.**

(1) **Applicability.** An applicant for a Kentucky pollutant discharge elimination system (KPDES) permit to discharge pollutants from or affected by a coal remining operation may request a variance from the water quality criteria for pH, iron and manganese set forth in 401 KAR 5:031.

(2) **Application requirements.**

(a) The applicant shall comply with all KPDES permit application requirements, as set forth in 401 KAR 5:060.

(b) The applicant shall submit documentation from the Department for Surface Mining Reclamation and Enforcement (DSMRE) certifying that the proposed coal remining operation will be located on a remined area.

(c) The applicant shall:

1. Describe the hydrologic balance for the proposed coal remining operation, including:

a. Results of a detailed water quality and quantity monitoring program, including seasonal variations, variations in response to precipitation events, and modeled baseline pollution loads using the monitoring program; and

b. Monitoring for pH, alkalinity, acidity, total iron, total manganese, sulfates, total suspended solids, and any other water quality parameters requested by the cabinet;

2. Submit the application for a permit from DSMRE;

3. Submit, if not submitted in the application for a permit from DSMRE:

a. Plans, cross-sections, and schematic drawings describing the techniques for reducing the

discharge of acid-forming materials, iron and manganese;

b. A description and an explanation of the range of abatement levels that probably can be achieved, costs, and each step proposed to reduce the discharge of acid-forming materials, iron and manganese;

c. A description of the spoil handling practices necessary to reduce the discharge of acid-forming materials, iron and manganese;

d. A detailed topographic map of the proposed coal remining operation, including the locations of the preexisting and proposed discharges; and

4. Continue the water quality and quantity monitoring program described in subparagraph 1 of this paragraph, and submit the results to the cabinet on a periodic basis until the cabinet makes a final permit decision. The cabinet shall evaluate the KPDES monitoring program and the DSMRE monitoring program for each applicant to avoid duplication and inconsistencies.

(d) An applicant with an existing surface coal mining operation seeking a permit revision from DSMRE pursuant to 405 KAR 8:010, Section 20 shall also demonstrate to the satisfaction of the cabinet that:

1. The applicant discovered discharges within the proposed coal remining area after the applicant's DSMRE permit was issued; and

2. The applicant has not caused or contributed to the discharges.

(3) Treatment requirements. If the cabinet issues a KPDES permit to discharge pollutants from or affected by a coal remining operation containing the variance described in subsection (1) of this section, the water quality-based effluent limitations for pH, iron and manganese shall be established on a case-by-case basis. Compliance with those effluent limitations constitutes compliance with those water quality criteria for pH, iron and manganese set forth in 401 KAR 5:031.

(4) Prohibitions. In addition to the prohibitions contained in 401 KAR 5:055, the following prohibitions apply to this section:

(a) No KPDES permit containing the water quality-based variance of subsection (1) of this section shall be issued unless the coal remining operation has applied for a permit from the Department for Surface Mining Reclamation and Enforcement, as set forth in 405 KAR Chapters 7 through 24, inclusive. The effective date of the KPDES permit shall be no sooner than the effective date of the permit issued by the Department for Surface Mining Reclamation and Enforcement.

(b) No KPDES permit containing the water quality-based variance of subsection (1) of this section shall be issued for a surface coal mining operation which is not a coal remining operation located on a remined area.

(c) No KPDES permit containing the water quality-based variance of subsection (1) of this section shall be issued which would allow the discharges of acid-forming materials, iron or manganese to exceed the levels being discharged from the remined area before the coal remining operation begins.

(d) No KPDES permit containing the water quality-based variance of subsection (1) of this section shall be issued if the applicant fails to demonstrate to the satisfaction of the cabinet that the coal remining operation will result in the potential for improved water quality from the remining operation over that existing prior to the remining operation, and that the information provided in the application is adequate for the cabinet to make an informed final permit decision.

(e) No KPDES permit containing the water quality-based variance of subsection (1) of this section shall be issued with effluent limitations less stringent than applicable technology-based

effluent limitations established in 401 KAR 5:065 or 401 KAR 5:080.

(f) In addition to the prohibitions of paragraphs (a) through (e) of this subsection, no KPDES permit containing the water quality based variance of subsection (1) of this section shall be issued for an existing surface coal mining operation unless:

1. The applicant receives a permit revision from DSMRE in accordance with 405 KAR 8:010, Section 20;
2. The applicant discovered discharges within the proposed coal remining area after the applicant's DSMRE permit was issued; and
3. The applicant has not caused or contributed to the discharges since August 3, 1977.

#### **Section 6. Federal Regulation Adopted Without Change.**

(1) The following federal regulation governs the subject matter of this administrative regulation and is adopted without change: 40 C.F.R. Part 136 Guidelines Establishing Test Procedures for the Analysis of Pollutants, July 1, 1998, U.S. Environmental Protection Agency, U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, D. C. 20402-9328.

(2) This federal regulation may be inspected, copied, or obtained at the Division of Water, 14 Reilly Road, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m. (5 Ky. R. 827; Am. 6 Ky. R. 341; eff. 12-5-79; 11 Ky. R. 1141; 1380; eff. 4-9-85; 16 Ky. R. 833; 1367; 2676; eff. 5-31-90; 2257; 2676; eff. 7-11-90; 26 Ky. R. 1141, eff. 12-8-99.)

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
 Department for Environmental Protection  
 Division of Water

**401 KAR 5:030. Antidegradation policy implementation methodology.**

RELATES TO: KRS 146.200 to 146.360, 146.410 to 146.535, 146.550 to 146.570, 146.600 to 146.619, 146.990, 224.01-100, 224.01-400, 224.16-050, 224.16-070, 224.40, 224.43, 224.46, 224.50, 224.60, 224.70, 224.71, 224.73

STATUTORY AUTHORITY: KRS 146.220, 146.241, 146.270, 146.410, 146.450, 146.460, 146.465, 224.10-100, 224.16-050, 224.16-060, 224.70-110, 40 C.F.R. Part 131, 16 U.S.C. 1271 et seq., 1531 et seq., 33 U.S.C. 1311, 1313, 1314, 1316, 1341, 1342

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to develop and conduct a comprehensive program for the management of water resources and to provide for the prevention, abatement, and control of all water pollution. KRS 224.70-100 declares that the policy of the Commonwealth is to conserve its waters for legitimate uses and to safeguard from pollution the uncontaminated waters of the Commonwealth, prevent the creation of any new pollution in the waters of the Commonwealth, and abate any existing pollution. This administrative regulation and 401 KAR 5:002, 5:026, 5:029, and 5:031 establish procedures to protect the surface waters of the Commonwealth, and thus protect water resources. This administrative regulation establishes a methodology to implement the antidegradation policy contained in 401 KAR 5:029 by establishing procedures to control water pollution in waters affected by that policy.

**Section 1. Implementation of Antidegradation Policy.** The following procedures shall govern implementation of the antidegradation policy of 401 KAR 5:029, Section 1, for a point source discharge.

- (1) Categorization. Surface waters shall be placed into one (1) of three (3) categories:
  - (a) Outstanding national resource waters:
    1. Surface water that meets, at a minimum, the requirements for an outstanding state resource water classification found in 401 KAR 5:031 Section 7; and
    2. Surface water that demonstrates to be of national ecological or recreational significance.
  - (b) Exceptional waters:
    1. Surface water designated as a Kentucky Wild River, unless it is categorized as an outstanding national resource water;
    2. Outstanding state resource water that does not support a federally threatened or endangered aquatic species;
    3. Surface water that fully supports all applicable designated uses and contains:
      - a. A fish community that is rated "excellent" by the use of the Index of Biotic Integrity, included in "Methods for Assessing Biological Integrity of Surface Waters", incorporated by reference in Section 4 of this administrative regulation; or

b. A macroinvertebrate community that is rated "excellent" by the Macroinvertebrate Bioassessment Index, included in "A Macroinvertebrate Bioassessment Index for Streams of the Interior Plateau Ecoregion in Kentucky", incorporated by reference in Section 4 of this administrative regulation; and

4. Water in the cabinet's reference reach network.

(c) Use protected waters. Use protected water is water not listed in Section 3 of this administrative regulation as outstanding national resource water or exceptional water.

(2) Procedure for implementing the antidegradation policy in outstanding national resource waters.

(a) Water quality shall be maintained and protected in outstanding national resource waters.

(b) The cabinet may approve temporary or short-term changes in water quality if the changes to the waters in question have no demonstrable impact on the ability of the waters to support their designated uses.

(3) Procedure for implementing the antidegradation policy in exceptional waters.

(a) A KPDES permit for an unpermitted or expanded discharge shall contain effluent limitations for the entire effluent that are as follows:

1. Domestic discharges shall have an effluent quality of:

a. No greater than ten (10) mg/l five (5) day carbonaceous biochemical oxygen demand;

b. No greater than two (2) mg/l ammonia-nitrogen;

c. No greater than 0.010 mg/l total residual chlorine;

d. No greater than ten (10) mg/l total suspended solids;

e. No greater than one (1) mg/l total phosphorus;

f. A minimum seven (7) mg/l dissolved oxygen;

g. A chronic whole effluent toxicity limit unless an acute whole effluent toxicity limit is more stringent;

h. A geometric mean value for fecal coliform bacteria not to exceed 200 colonies per 100 milliliters during a period of thirty (30) consecutive days or 400 colonies per 100 milliliters during a period of seven (7) consecutive days; and

i. The discharge shall not cause the average instream dissolved oxygen concentration to be less than six and zero-tenths (6.0) mg/l.

2. Chloride limits shall be based on the domestic water supply criterion of 250 mg/l.

3. Stormwater discharges shall be exempt from antidegradation implementation procedures for exceptional waters, but shall be subject to control by existing cabinet programs.

4. Chronic whole effluent toxicity limits shall apply unless an acute whole effluent toxicity limit is more stringent.

5. Waste discharges that are not domestic waste or stormwater discharges shall be restricted to no more than one-half (1/2) of the limitation that would have been permitted for use protected waters at standard design conditions.

6. KPDES permit renewals that result in less than a twenty (20) percent increase in pollutant loading are exempt from implementation procedures for exceptional waters and shall be regulated by the requirements in Section 1(4)(a) and (b) of this administrative regulation.

(b) If the permit applicant determines that it can meet effluent limitations required by paragraph (a) of this subsection, the KPDES permit shall be issued with the effluent limitations without further antidegradation review as described in subsection (4) of this section for use protected waters. If a KPDES permit applicant cannot meet the effluent limitations the applicant may request a less stringent limitation. In making this request, the applicant shall demonstrate to the satisfaction

of the cabinet that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located following the guidelines in "Interim Economic Guidance for Water Quality Standards Workbook", EPA, March 1995 incorporated by reference in Section 4 of this administrative regulation and include an alternatives analysis that shall consider the following:

1. Discharge to other treatment facilities;
2. Use of other discharge locations;
3. Water reuse or recycle;
4. Process and treatment alternatives; and
5. On-site or subsurface disposal.

In allowing the resultant lowering of water quality, the cabinet shall assure water quality necessary to fully protect existing uses.

(c) Zones of initial dilution are prohibited in exceptional waters unless assigned before the effective date of this administrative regulation.

(4) Procedure for implementing the antidegradation policy in use protected waters for point source discharges. All surface waters not listed in Section 3 of this administrative regulation as outstanding national resource waters or exceptional waters shall be categorized as use protected waters.

(a) All existing uses shall be protected and the level of water quality necessary to protect the uses shall be assured in the use protected water.

(b) The process to allow a discharge to a use protected water and to assure the water's protection is regulated by the requirements in the Kentucky Pollution Discharge Elimination System Program.

(5) The antidegradation procedures shall not preempt the power or authority of a local government to provide by ordinance for a higher level of protection through antidegradation implementation for dischargers located within that local government's jurisdiction to surface waters of the Commonwealth.

**Section 2. Procedure for Recategorizing Waters.** This section shall apply to the recategorization of surface waters to outstanding national resource waters and exceptional waters. The redesignation of waters to outstanding state resource waters shall be governed by the procedures in 401 KAR 5:026.

(1) The cabinet may propose to recategorize certain waters to outstanding national resource waters and exceptional waters.

(a) If the cabinet proposes to recategorize these waters, it shall provide notice and an opportunity for public hearing.

(b) The cabinet shall provide the documentation requirements of this section for those surface waters it proposes to recategorize.

(2) A person may request recategorization of a surface water to an outstanding national resource water or exceptional water by filing a petition with the cabinet.

(a) The petition shall include the name and address of the petitioner and the information and documentation necessary to recategorize the particular water as required by subsection (4) of this section;

(b) The petitioner shall have the burden of proof that the recategorization is appropriate.

(c) The cabinet shall provide notice of the petition and an opportunity for a public hearing.

(d) The cabinet shall review the petition, supporting documentation, and any comments

received from the public to determine if the proposed water qualifies for recategorization.

(e) The cabinet shall document the determination to grant or deny recategorization as a result of a petition, and shall provide a copy of the decision to the petitioner and other interested parties.

(3) If a water is to be recategorized, the cabinet shall publish notice of the recategorization. Any permit issued after the date of publication shall be issued with limitations based on the new category. When the cabinet reviews its water quality standards pursuant to the provisions of Section 303 of the Clean Water Act, the cabinet shall propose to have all recategorized waters promulgated as an amendment to this administrative regulation.

(4) The following information, documentation, and data shall support a petition for recategorization:

(a) A petition for outstanding national resource waters shall include:

1. A United States Geological Survey 7.5 minute topographic map or its equivalent as approved by the cabinet showing those surface waters to be recategorized, including a description consisting of a river mile index with any existing and proposed discharge points;

2. Existing uses and water quality data for the surface waters for which the recategorization is proposed. If adequate data are unavailable, additional studies may be required by the cabinet;

3. Descriptions of general land uses and specific land uses adjacent to the surface waters for which the recategorization is proposed;

4. The existing and designated uses of the waters upstream and downstream of the proposed recategorized waters;

5. General physical characteristics of the surface water including width, depth, bottom composition, and slope;

6. The frequency of occasions when there is no natural flow in the surface water, and the 7Q<sub>10</sub> and harmonic mean flow values for the surface water and adjacent surface waters;

7. An assessment of the existing and potential aquatic life habitat in the surface waters under consideration and the adjacent upstream surface waters. The existing aquatic life shall be documented including the occurrence of individuals or populations, indices of diversity and well-being, and abundance of species of any unique native biota;

8. A documented rationale as to why the waters qualify for the recategorization; and

9. The rationale used to support the national significance of the water.

(b) A petition for exceptional waters shall include the following:

1. A United States Geological Survey 7.5 minute topographic map or its equivalent as approved by the cabinet showing the surface waters to be recategorized including a description consisting of a river mile index with existing and proposed discharge points;

2. Descriptions of general land uses, including mining, agricultural, recreational, low, medium, high density residential, commercial, and industrial, and specific land uses adjacent to the surface waters for which the recategorization is proposed; and

3. The frequency of occasions when there is no natural flow in the surface water, and the 7Q<sub>10</sub> and annual mean flow values for the surface water; and

4. Fish or benthic macroinvertebrate collection data and an Index of Biotic Integrity or Macroinvertebrate Bioassessment Index calculation from a waterbody if criteria specified in Section 1(3)(c) of this administrative regulation are utilized.

**Section 3. Surface Water Categories.** Surface waters categorized for antidegradation purposes are listed in the following tables. The county column indicates the county in which the mouth or outlet of the surface water is located.

SURFACE WATERS CATEGORIZED AS OUTSTANDING NATIONAL RESOURCE WATERS		
Stream	Zone	County
Red River	River Mile 68.6 to River Mile 49.2	Menifee/ Wolfe
Underground River System	Within Mammoth Cave National Park Boundary	Edmonson/Hart/ Barren
Big South Fork of Cumberland River	River Mile 55.2 to River Mile 45.0	McCreary
SURFACE WATERS CATEGORIZED AS EXCEPTIONAL WATERS		
Stream	Zone	County
LITTLE SANDY RIVER BASIN		
Arabs Fork*	Source to Clay Fork	Carter
Big Caney Creek*	Source to Grayson Lake	Elliott
Big Sinking Creek*	Source to River Mile 10.7	Carter
Laurel Creek*	Source to River Mile 7.6	Elliott
LICKING RIVER BASIN		
Blackwater Creek	River Mile 11.4 to River Mile 3.8	Morgan
Bucket Branch*	Source to North Fork of Licking River	Morgan
Devils Fork*	Source to North Fork of Licking River	Morgan
Licking River	River Mile 165.0 to River Mile 154.5	Bath/Rowan
North Fork of Licking River*	Source to River Mile 13.0	Morgan
KENTUCKY RIVER BASIN		
Buffalo Creek*	River Mile 12.8 to River Mile 0.8	Owsley
Cavanaugh Creek	River Mile 5.3 to South Fork of Station Camp Creek	Jackson
Clear Creek*	Source to River Mile 4.1	Woodford
Clemons Fork*	Source to Buckhorn Creek	Breathitt
Coles Fork*	Source to Buckhorn Creek	Breathitt
Drennon Creek*	River Mile 11.9 to River Mile 10.5	Henry
East Fork of Indian Creek*	Source to West Fork of Indian Creek	Menifee
Elisha Creek*	Source to River Mile 0.95	Leslie
Gladie Creek*	Source to Red River	Menifee
Goose Creek	Laurel Creek to Red Bird River	Clay
Hardwick Creek	Little Hardwick Creek to Red River	Powell
Indian Creek*	River Mile 4.7 to River Mile 0.55	Carroll
Line Fork	River Mile 27.5 to River Mile 17.3	Letcher
Lulbegrud Creek	Falls Branch to Red River	Clark/Powell
Middle Fork of Kentucky River	Upper Twin Creek to North Fork of Kentucky River	Lee
Middle Fork of Kentucky River	Greasy Creek to Buckhorn Reservoir backwaters	Leslie
Musselman Creek*	River Mile 8.4 to River Mile 2.6	Grant

Red Bird River	Big Creek to Goose Creek	Clay
Right Fork of Buffalo Creek*	Source to Buffalo Creek	Owsley
South Fork of Kentucky River	Sexton Creek to River Mile 11.3	Owsley
South Fork of Red River	Sand Lick Fork to Middle Fork of Red River	Powell
South Fork of Station Camp Creek*	Source to River Mile 5.3	Jackson
Station Camp Creek*	River Mile 22.3 to River Mile 19.0	Estill
Sturgeon Creek*	Source to River Mile 4.0	Lee
Sugar Creek*	Source to River Mile 0.8	Leslie
Wolfpen Creek*	Source to Red River	Meniffee
SALT RIVER BASIN		
Salt Lick Creek*	Source to River Mile 5.3	Marion
Wilson Creek*	Source to River Mile 12.2	Bullitt
GREEN RIVER BASIN		
Beaverdam Creek*	Source to River Mile 7.6	Edmonson
Caney Fork*	Source to River Mile 0.85	Barren
Falling Timber Creek*	River Mile 16.0 to River Mile 11.5	Metcalf
Gasper River*	Source to River Mile 32.3	Logan
Goose Creek*	Source to River Mile 5.6	Casey
Green River	River Mile 207.8 to River Mile 181.7	Edmonson
Lick Creek*	Source to River Mile 5.3	Simpson
Otter Creek*	Source, including East and Middle Fork, to River Mile 1.75	Larue
Peter Creek*	River Mile 18.05 to River Mile 13.05	Barren
Russell Creek*	Source to River Mile 23.8	Adair
Trammel Fork*	River Mile 30.15 (Kentucky-Tennessee State Line) to River Mile 19.4	Allen
LOWER CUMBERLAND RIVER BASIN		
West Fork of Red River*	River Mile 26.5 to River Mile 16.3	Christian
Whipporwill Creek*	Source to Red River	Logan
TENNESSEE RIVER BASIN		
Blood River*	River Mile 15.65 (Kentucky-Tennessee State Line) to River Mile 15.1	Calloway
Panther Creek*	Source to River Mile 1.2	Calloway
Soldier Creek*	River Mile 5.3 to River Mile 2.6	Marshall
TRADEWATER RIVER BASIN		
Sandlick Creek*	Source to River Mile 3.5	Christian
Tradewater River*	Source to River Mile 126.0	Christian
OHIO RIVER BASIN (Main Stem and Minor Tributaries)		
Yellowbank Creek*	Source to River Mile 4.4	Breckinridge
LAKES AND RESERVOIRS		
Metropolis	Entire Lake	McCracken
Swan	Entire Lake	Ballard

MISSISSIPPI RIVER BASIN (Main Stem and Minor Tributaries)		
Murphy's Pond	Entire Pond and Preserve Area	Hickman
UPPER CUMBERLAND RIVER BASIN		
Bad Branch*	Source to Poor Fork of Cumberland River	Letcher
Bark Camp Creek*	Source to River Mile 2.6	Whitley
Buck Creek*	River Mile 62.6 to River Mile 28.9	Pulaski
Cane Creek*	Source to River Mile 7.0	Laurel
Cumberland River	River Mile 574.6 to River Mile 558.5 (Headwaters of Lake Cumberland)	McCreary/Whitley
Eagle Creek*	Source to River Mile 3.0	McCreary
Horse Lick Creek*	Source to River Mile 12.3	Jackson
Little South Fork of Cumberland River	River Mile 35.6 to River Mile 4.1	Wayne
Marsh Creek*	Source to River Mile 12.6	McCreary
Martins Fork of Cumberland River	River Mile 31.3 to River Mile 27.4	Harlan
Rock Creek	Tennessee-Kentucky State Line (River Mile 21.9) to White Oak Creek	McCreary
Rockcastle River	River Mile 24.4 to River Mile 8.5	Laurel/Pulaski
South Fork of Dog Slaughter Creek*	Source to Dog Slaughter Creek	Whitley
* Waterbodies in the cabinet's reference reach network		

#### Section 4. Incorporation by Reference.

(1) The following material is incorporated by reference:

(a) "Methods for Assessing Biological Integrity of Surface Water", October 1993, Kentucky Division of Water, Natural Resources and Environmental Protection Cabinet;

(b) "A Macroinvertebrate Bioassessment Index for Streams of the Interior Plateau Ecoregion in Kentucky", June 1999, Kentucky Division of Water, Natural Resources and Environmental Protection Cabinet;

(c) "Interim Economic Guidance for Water Quality Standards Workbook", EPA, March 1995, Publication EPA-823-B-95-002, U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

(2) This material may be inspected, copied, or obtained at the Division of Water, 14 Reilly Road, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m. (21 Ky. R. 2843; Am. 22 Ky. R. 89; 280; eff. 7-12-95; 26 Ky. R. 1144, eff. 12-8-99.)

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
 Department for Environmental Protection  
 Division of Water

**401 KAR 5:031. Surface water standards.**

RELATES TO: KRS 146.200 to 146.360, 146.410 to 146.535, 146.550 to 146.570, 146.600 to 146.619, 146.990, 224.01-100, 224.01-400, 224.16-050, 224.16-070, 224.40, 224.43, 224.46, 224.50, 224.60, 224.70, 224.71, 224.73

STATUTORY AUTHORITY: KRS 146.220, 146.241, 146.270, 146.410, 146.450, 146.460, 146.465, 224.10-100, 224.16-050, 224.16-060, 224.70-100, 224.70-110, 40 C.F.R. Part 131, 16 U.S.C. 1271 et seq., 1531 et seq., 33 U.S.C. 1311, 1313, 1314, 1341

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to develop and conduct a comprehensive program for the management of water resources and to provide for the prevention, abatement, and control of water pollution. This administrative regulation and 401 KAR 5:002, 5:026, 5:029, and 5:030 establish procedures to protect the surface waters of the Commonwealth, and thus protect water resources. This administrative regulation establishes water quality standards which consist of designated legitimate uses of the surface waters of the Commonwealth and the associated water quality criteria necessary to protect those uses. These water quality standards are minimum requirements that apply to all surface waters in the Commonwealth of Kentucky in order to maintain and protect them for designated uses. These water quality standards are subject to periodic review and revision in accordance with federal and state laws.

**Section 1. Nutrient Limits.** In lakes and reservoirs and their tributaries, and other surface waters where eutrophication problems may exist, nitrogen, phosphorus, carbon, and contributing trace element discharges shall be limited in accordance with:

- (1) The scope of the problem;
- (2) The geography of the affected area; and
- (3) Relative contributions from existing and proposed sources.

**Section 2. Minimum Criteria Applicable to All Surface Waters.**

(1) The following minimum water quality criteria are applicable to all surface waters including mixing zones, with the exception that toxicity to aquatic life in mixing zones shall be subject to the provisions of 401 KAR 5:029, Section 4. Surface waters shall not be aesthetically or otherwise degraded by substances that:

- (a) Settle to form objectionable deposits;
- (b) Float as debris, scum, oil, or other matter to form a nuisance;
- (c) Produce objectionable color, odor, taste, or turbidity;
- (d) Injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish and other aquatic life;

- (e) Produce undesirable aquatic life or result in the dominance of nuisance species;
  - (f) Cause fish flesh tainting. The concentration of all phenolic compounds which cause fish flesh tainting shall not exceed five (5)  $\mu\text{g/l}$  as an instream value;
  - (g) Cause the following changes in radionuclides:
    1. The gross total alpha particle activity, including radium-226 but excluding radon and uranium, to exceed fifteen (15) pCi/l;
    2. Combined radium-226 and radium-228 to exceed five (5) pCi/l. Specific determinations of radium-226 and radium-228 are not necessary if dissolved gross alpha particle activity does not exceed five (5) pCi/l;
    3. The concentration of total gross beta particle activity to exceed fifty (50) pCi/l;
    4. The concentration of tritium to exceed 20,000 pCi/l;
    5. The concentration of total Strontium-90 to exceed eight (8) pCi/l.
- (2) The following criteria are applicable to all surface waters at the edge of the assigned mixing zones except for those points where water is withdrawn for domestic water supply use. The criteria are established to protect human health from the consumption of fish tissue, and shall not be exceeded. For those substances associated with a cancer risk, an acceptable risk level of no more than one (1) additional cancer case in a population of 1,000,000 people, or  $1 \times 10^{-6}$ , shall be utilized to establish the allowable concentration.

Table 1 Water Quality Criteria for Protection of Human Health from the Consumption of Fish Tissue	
Substances Not Linked to Cancer	Concentration ( $\mu\text{g/l}$ )
Metals <sup>1</sup>	
Antimony	4,300
Mercury	0.051
Nickel	4,600
Thallium	6.3
Zinc	69,000
Organics	
Acenaphthene	2,700
Acrolein	780
Anthracene	110,000
Chlorobenzene	21,000
1,2,4,5-tetrachlorobenzene	2.9
Pentachlorobenzene	4.1
bis(2-chloroisopropyl) ether	170,000
Cyanide	220,000
1,2-dichlorobenzene	17,000
1,3-dichlorobenzene	2,600
1,4-dichlorobenzene	2,600
1,3-dichloropropylene	1,700
1,2,4-trichlorobenzene	940
alpha-Endosulfan	240
beta-Endosulfan	240

Endosulfan sulfate	240
Endrin	0.81
Endrin aldehyde	0.81
Ethylbenzene	29,000
Fluoranthene	370
Fluorene	14,000
Hexachlorocyclopentadiene	17,000
2-chloronaphthalene	4,300
2-chlorophenol	400
2,4 dichlorophenol	790
2,4,5-trichlorophenol	9,800
2,4-dimethylphenol	2,300
2,4-dinitro-o-cresol, or 2-methyl-4,6-dinitrophenol	765
Butylbenzyl phthalate	5,200
2,4 dinitrophenol	14,000
Phenol	4,600,000
Di-n-butyl phthalate	12,000
Diethyl phthalate	120,000
Dimethyl phthalate	2,900,000
1,3-dichloropropene	1,700
Pyrene	11,000
Methyl bromide	4,000
Nitrobenzene	1,900
Toluene	200,000
<b>Substances Linked to Cancer</b>	
<b>Organics</b>	
Acrylonitrile	0.65
Aldrin	0.00014
Benzene	71
Benzidine	0.00054
Benzo(a)anthracene	0.049
Benzo(a)pyrene	0.049
Benzo(b)fluoranthene	0.049
Benzo(k)fluoranthene	0.049
Bromoform	360
Carbon tetrachloride	4.4
Chlordane	0.0022
Chlorodibromomethane	34
Dichlorobromomethane	46
Hexachlorobenzene	0.00077
1,2-dichloroethane	99
1,1,2-trichloroethane	41.8
1,1,2,2-tetrachloroethane	10.7
Hexachloroethane	8.9

1,2-dichloropropane	39
2,4,6-trichlorophenol	6.5
Pentachlorophenol	8.2
bis(2-chloroethyl) ether	1.40
bis(2-ethylhexyl) phthalate	5.9
Chloroform	470
Chrysene	0.049
4,4'-DDE	0.00059
4,4'-DDD	0.00084
4,4'-DDT	0.00059
Dibenzo(a,h)anthracene	0.049
3,3'-dichlorobenzidine	0.077
1,1-dichloroethylene	3.2
1,2-trans-dichloroethylene	140,000
Dieldrin	0.00014
2,4-dinitrotoluene	9.1
Dioxin, 2,3,7,8-TCDD	0.000000014
1,2- diphenylhydrazine	0.54
Heptachlor	0.00021
Heptachlor epoxide	0.00011
Hexachlorobutadiene	50.0
alpha Hexachlorocyclohexane or BHC	0.013
beta BHC	0.046
gamma BHC or lindane	0.063
Indeno(1,2,3-cd)pyrene	0.049
Isophorone	2,600
Methylene chloride	1,600
N-nitrosodimethylamine	8.1
N-nitrosodi-n-propylamine	1.4
N-nitrosodiphenylamine	16.0
Polychlorinated Biphenyls or PCBs	0.000079
Tetrachloroethylene	8.85
Toxaphene	0.00075
Trichlorethylene	81
Vinyl Chloride	525

<sup>1</sup>Total recoverable form measured in an unfiltered sample

### Section 3. Use Designations and Associated Criteria.

(1) Surface waters may be designated as having one (1) or more legitimate uses and associated criteria protective of those uses. Those uses are listed in 401 KAR 5:026. Nothing in this administrative regulation shall be construed to prohibit or impair the legitimate beneficial uses of these waters. The criteria in Sections 2, 4, 5, and 6 of this administrative regulation represent minimum conditions necessary to:

- (a) Protect surface waters for the indicated use; and

(b) Protect human health from fish consumption.

(2) On occasion, surface water quality may be outside of the limits established to protect designated uses because of natural conditions. If this occurs during periods when stream flows are below the flow that is used by the cabinet to establish effluent limitations for wastewater treatment facilities, a discharger shall not be considered a contributor to instream violations of water quality standards, if treatment results in compliance with permit requirements.

(3) Stream flows for water quality-based permits. The following stream flows shall be utilized when deriving KPDES permit limitations to protect surface waters for the listed uses and purposes:

- (a) Aquatic life protection shall be  $7Q_{10}$ ;
- (b) Water-based recreation protection shall be  $7Q_{10}$ ;
- (c) Domestic water supply protection shall be determined at points of withdrawal as:
  - 1. the harmonic mean for cancer-linked substances; and
  - 2.  $7Q_{10}$  for noncancer-linked substances;
- (d) Human health protection from fish consumption only shall be:
  - 1. the harmonic mean for cancer-linked substances; and
  - 2.  $7Q_{10}$  for noncancer-linked substances; and
- (e) Protection of aesthetics and for changes in radionuclides shall be  $7Q_{10}$ .

#### Section 4. Aquatic Life.

(1) Warm water aquatic habitat. The following parameters and associated criteria shall apply for the protection of productive warm water aquatic communities, fowl, animal wildlife, arborous growth, agricultural, and industrial uses:

(a) Natural alkalinity as  $\text{CaCO}_3$  shall not be reduced by more than twenty-five (25) percent. If natural alkalinity is below twenty (20) mg/l  $\text{CaCO}_3$ , there shall not be a reduction below the natural level. Alkalinity shall not be reduced or increased to a degree which may adversely affect the aquatic community.

(b) pH shall not be less than six and zero-tenths (6.0) nor more than nine and zero-tenths (9.0) and shall not fluctuate more than one and zero-tenths (1.0) pH unit over a period of twenty-four (24) hours.

(c) Flow shall not be altered to a degree which will adversely affect the aquatic community.

(d) Temperature shall not exceed thirty-one and seven-tenths (31.7) degrees Celsius (eighty-nine (89) degrees Fahrenheit).

1. The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.

2. The cabinet may determine allowable surface water temperatures on a site-specific basis utilizing available data which shall be based on the effects of temperature on the aquatic biota which utilize specific surface waters of the Commonwealth and which may be affected by person-induced temperature changes. Effects on downstream uses will also be considered in determining site-specific temperatures. As a guideline, the water temperature for all surface waters shall comply with the limitations shown in the following table:

Month/Date	Period Average (°F)	Instantaneous Maximum (°F)
January 1-31	45	50
February 1-29	45	50

March 1-15	51	56
March 16-31	54	59
April 1-15	58	64
April 16-30	64	69
May 1-15	68	73
May 16-31	75	80
June 1-15	80	85
June 16-30	83	87
July 1-31	84	89
August 1-31	84	89
September 1-15	84	87
September 16-30	82	86
October 1-15	77	82
October 16-31	72	77
November 1-30	67	72
December 1-31	52	57

3. A successful demonstration concerning thermal discharge limits carried out under Section 316(a) of the Clean Water Act shall constitute compliance with the temperature requirements of this subsection. A successful demonstration assures the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in or on the water into which the discharge is made.

(e) Dissolved oxygen.

1. Dissolved oxygen shall be maintained at a minimum concentration of five and zero-tenths (5.0) mg/l daily average; the instantaneous minimum shall not be less than four and zero-tenths (4.0) mg/l.

2. The dissolved oxygen concentration shall be measured at middepth in waters having a total depth of ten (10) feet or less and at representative depths in other waters.

(f) Solids.

1. Total dissolved solids. Total dissolved solids shall not be changed to the extent that the indigenous aquatic community is adversely affected.

2. Total suspended solids. Total suspended solids shall not be changed to the extent that the indigenous aquatic community is adversely affected.

3. Settleable solids. The addition of settleable solids that may alter the stream bottom so as to adversely affect productive aquatic communities is prohibited.

(g) Ammonia. The concentration of the un-ionized form shall not be greater than 0.05 mg/l at any time instream after mixing. Un-ionized ammonia shall be determined from values for total ammonia-N, in mg/l, pH and temperature, by means of the following equation:

$$Y = 1.2 (\text{Total ammonia-N}) / (1 + 10^{pK_a - \text{pH}})$$

$$pK_a = 0.0902 + (2730 / (273.2 + T_c))$$

Where:

$T_c$  = temperature, degrees Celsius.

Y = un-ionized ammonia (mg/l).

(h) Toxics.

1. The allowable instream concentration of toxic substances, or whole effluents containing

toxic substances, which are noncumulative or nonpersistent with a half-life of less than ninety-six (96) hours, shall not exceed:

a. One-tenth (0.1) of the ninety-six (96) hour median lethal concentration ( $LC_{50}$ ) of representative indigenous or indicator aquatic organisms; or

b. A chronic toxicity unit of 1.00 utilizing the twenty-five (25) percent inhibition concentration, or  $LC_{25}$ .

2. The allowable instream concentration of toxic substances, or whole effluents containing toxic substances, which are bioaccumulative or persistent, including pesticides, when not specified elsewhere in this section, shall not exceed:

a. 0.01 of the ninety-six (96) hour median lethal concentration ( $LC_{50}$ ) of representative indigenous or indicator aquatic organisms; or

b. A chronic toxicity unit of 1.00 utilizing the  $IC_{25}$ .

3. In the absence of acute criteria for substances listed in Table 2 or for other substances known to be toxic but not listed in this administrative regulation, or for whole effluents which are acutely toxic, the allowable instream concentration shall not exceed the  $LC_1$  or one-third (1/3)  $LC_{50}$  concentration derived from toxicity tests on representative indigenous or indicator aquatic organisms or exceed three-tenths (0.3) acute toxicity units.

4. If specific application factors have been determined for a toxic substance or whole effluent such as an acute to chronic ratio or water effect ratio, they may be used instead of the one-tenth (0.1) and 0.01 factors listed in this subsection upon approval by the cabinet.

5. Allowable instream concentrations for specific substances are listed in Table 2. These concentrations are based on protecting aquatic life from acute and chronic toxicity and shall not be exceeded.

Table 2 Warm Water Aquatic Habitat Criteria <sup>1</sup>		
Metals		
Substance	Acute Criteria	Chronic Criteria
Arsenic		50 µg/l
Arsenic (III)	340 µg/l	150 µg/l
Cadmium (µg/l)	$e^{(1.128 (\ln \text{Hard}) - 3.687)}$	$e^{(0.7852 (\ln \text{Hard}) - 2.715)}$
Chromium (III) (µg/l)	$e^{(0.8190 (\ln \text{Hard}) + 3.726)}$	$e^{(0.8190 (\ln \text{Hard}) + 0.685)}$
Chromium (VI)	16 µg/l	11 µg/l
Copper (µg/l)	$e^{(.9422 (\ln \text{Hard}) - 1.700)}$	$e^{(.8545 (\ln \text{Hard}) - 1.702)}$
Iron	4.0 mg/l	1.0 mg/l <sup>2</sup>
Lead (µg/l)	$e^{(1.273 (\ln \text{Hard}) - 1.460)}$	$e^{(1.273 (\ln \text{Hard}) - 4.705)}$
Mercury	1.7 µg/l	0.91 µg/l
Nickel (µg/l)	$e^{(0.8460 (\ln \text{Hard}) + 2.255)}$	$e^{(0.8460 (\ln \text{Hard}) + 0.0584)}$
Selenium	20 µg/l	5 µg/l
Silver (µg/l)	$e^{(1.72 (\ln \text{Hard}) - 6.52)}$	
Zinc (µg/l)	$e^{(0.8473 (\ln \text{Hard}) + 0.884)}$	$e^{(0.8473 (\ln \text{Hard}) + 0.884)}$
Organics		
Aldrin	3.0 µg/l	
Chlordane	2.4 µg/l	0.0043 µg/l

Chloropyrifos	0.083 µg/l	0.041 µg/l
4,4'-DDT	1.1 µg/l	0.001 µg/l
Dieldrin	0.24 µg/l	0.056 µg/l
alpha-Endosulfan	0.22 µg/l	0.056 µg/l
beta-Endosulfan	0.22 µg/l	0.056 µg/l
Endrin	0.086	0.036
Guthion		0.01 µg/l
Heptachlor	0.52 µg/l	0.0038 µg/l
Heptachlor epoxide	0.52 µg/l	0.0038 µg/l
Lindane or gamma BHC	0.95 µg/l	
Malathion		0.1 µg/l
Mirex		0.001 µg/l
Methoxychlor		0.030 µg/l
Parathion	0.065 µg/l	0.013 µg/l
Pentachlorophenol (µg/l)	$e^{(1.005 (\text{pH}) - 4.869)}$	$e^{(1.005 (\text{pH}) - 5.134)}$
Phthalate esters		3 µg/l
Polychlorinated Biphenyls or PCBs		0.0014 µg/l
Toxaphene	0.73 µg/l	0.0002 µg/l
Others		
Chloride	1200 mg/l	600 mg/l
Chlorine, total residual	19 µg/l	11 µg/l
Cyanide, free	22 µg/l	5.2 µg/l
Hydrogen sulfide (undissociated)		2 µg/l

<sup>1</sup> Metal criteria, for purposes of this administrative regulation, are total recoverable metals to be measured in an unfiltered sample, unless it can be demonstrated to the satisfaction of the cabinet that a more appropriate analytical technique is available which provides a measurement of that portion of the metal present which causes toxicity to aquatic life.

<sup>2</sup> The chronic criterion for iron shall not exceed three and five-tenths (3.5) mg/l if aquatic life has not been shown to be adversely affected.

\* Hard = Hardness as mg/l CaCO<sub>3</sub>.

(2) Cold water aquatic habitat. The following parameters and criteria are for the protection of productive cold water aquatic communities and streams that support trout populations, whether self-sustaining or reproducing, on a year-round basis. The criteria adopted for the protection of warm water aquatic life also apply to the protection of cold water habitats with the following additions:

(a)\* Dissolved oxygen.

1. A minimum concentration of six and zero-tenths (6.0) mg/l as a daily average and five and zero-tenths (5.0) mg/l as an instantaneous minimum shall be maintained.

2. In lakes and reservoirs that support trout, the concentration of dissolved oxygen in waters below the epilimnion shall be kept consistent with natural water quality.

(b) Temperature. Water temperature shall not be increased through human activities above the natural seasonal temperatures.

**Section 5. Domestic Water Supply Use.** Maximum allowable instream concentrations for specific substances, to be applicable at the point of withdrawal for use for domestic water supply from surface water sources are specified in Table 3 and shall not be exceeded.

Table 3 Domestic Water Supply Source Criteria	
Substances Not Linked to Cancer	Concentration
Metals <sup>1</sup>	
Antimony	0.006 mg/l
Barium	2.0 mg/l
Beryllium	0.004 µg/l
Cadmium	0.005 mg/l
Chromium	0.10 mg/l
Copper	1.0 mg/l
Lead	0.015 mg/l
Manganese	0.05 mg/l
Mercury	0.000050 mg/l
Nickel	0.100 mg/l
Selenium	0.05 mg/l
Silver	0.05 mg/l
Thallium	0.0017 mg/l
Zinc	5.0 mg/l
Organics	
Acenaphthene	1.200 mg/l
Acrolein	0.320 mg/l
Anthracene	9.6 mg/l
Monochlorobenzene or Chlorobenzene	0.680 mg/l
1, 2, 4, 5-tetrachlorobenzene	0.0023 mg/l
Pentachlorobenzene	0.0035 mg/l
Bis (2-chloroisopropyl) ether	1.4 mg/l
1,2-dichlorobenzene	0.600 mg/l
1,3-dichlorobenzene	0.400 mg/l
1,4-dichlorobenzene	0.075 mg/l
1,2,4-trichlorobenzene	0.070 mg/l
alpha-Endosulfan	0.110 mg/l
beta-Endosulfan	0.110 mg/l
Endosulfan sulfate	0.110 mg/l
Endrin	0.00076 mg/l
Endrin aldehyde	0.00076 mg/l
Ethylbenzene	0.70 mg/l
Fluoranthene	0.300 mg/l
Fluorene	1.3 mg/l
Hexachlorocyclopentadiene	0.05 mg/l

Methylbromide	0.048 mg/l
2-Chloronaphthalene	1.700 mg/l
Nitrobenzene	0.017 mg/l
2-chlorophenol	0.120 mg/l
2,4-dichlorophenol	0.093 mg/l
2,4,5-trichlorophenol	2.6 mg/l
2,4-dimethylphenol	0.540 mg/l
2,4-dinitro-o-cresol or 2-methyl-4,6-dinitrophenol	0.0134 mg/l
2,4- dinitrophenol	0.070 mg/l
Phenol	21 mg/l
Butylbenzyl phthalate	3.0 mg/l
Di-n-butyl phthalate	2.7 mg/l
Diethyl phthalate	23 mg/l
Dimethyl phthalate	313 mg/l
1,3-dichloropropene	0.010 mg/l
Pyrene	0.960 mg/l
Toluene	1.0 mg/l
Others	
Chloride	250 mg/l
Color	75 Platinum Cobalt Color Units
Cyanide (free)	0.200 mg/l
Fecal Coliform	2000/100 ml (Geometric mean)
Fluoride	2.0 mg/l
Methylene Blue Active Substances	0.5 mg/l
Nitrate (NO <sub>3</sub> -N)	10 mg/l
Sulfate	250 mg/l
Total Dissolved Solids	750 mg/l
<b>Substances Linked to Cancer</b>	
Organics (µg/l)	
Acrylonitrile	0.058
Aldrin	0.00013
Asbestos (fibers/liter)	7,000,000
Benzene	1.2
Benzidine	0.00012
Benzo(a)anthracene	0.0044
Benzo(a)pyrene	0.0044
Benzo(b)fluoranthene	0.0044
Benzo(k)fluoranthene	0.0044
Bromoform	4.3
Carbon tetrachloride	0.25
Chlordane	0.0021
Chlorodibromomethane	0.41
Dichlorobromomethane	0.56
Hexachlorobenzene	0.00075

1,2-dichloroethane	0.38
1,1,1-trichloroethane	200
1,1,2-trichloroethane	0.60
1,1,2,2-tetrachloroethane	0.17
Hexachloroethane	1.9
1,2-dichloropropane	0.52
2,4,6-trichlorophenol	2.1
Pentachlorophenol	0.28
bis(2-chloroethyl) ether	0.031
bis(2-ethylhexyl) phthalate	1.8
Chloroform	5.7
Chrysene	0.0044
4,4'-DDT	0.00059
4,4'-DDE	0.00059
4,4'-DDD	0.00083
Dibenzo(a,h)anthracene	0.0044
3-3'-dichlorobenzidine	0.04
1,1-dichloroethylene	0.057
Dieldrin	0.00014
2,4-dinitrotoluene	0.11
Dioxin, 2,3,7,8-TCDD	0.000000013
1,2-diphenylhydrazine	0.040
Heptachlor	0.00021
Heptachlor epoxide	0.00010
Hexachlorobutadiene	0.44
alpha Hexachlorocyclohexane, or BHC	0.0039
beta BHC	0.014
gamma BHC or Lindane	0.019
Indeno (1,2,3-cd) pyrene	0.0044
Isophorone	36
Methylene chloride	4.7
N-nitrosodimethylamine	0.00069
N-nitrosodiphenylamine	5.0
N-nitrosodi-n-propylamine	0.005
Polychlorinated Biphenyls or PCBs	0.000079
Tetrachloroethylene	0.8
Toxaphene	0.00073
Trichloroethylene	2.7
Vinyl Chloride	2.0

<sup>1</sup> Total recoverable form measured in an unfiltered sample.

### Section 6. Recreational Waters.

(1) Primary contact recreation water. The following criteria shall apply to waters designated as primary contact recreation use:

(a) Fecal coliform content shall not exceed 200 colonies per 100 ml as a monthly geometric mean based on not less than five (5) samples per month; nor exceed 400 colonies per 100 ml in twenty (20) percent or more of all samples taken during the month. These limits shall be applicable during the recreation season of May 1 through October 31. Fecal coliform criteria listed in subsection (2)(a) of this section shall apply during the remainder of the year.

(b) pH shall be between six and zero-tenths (6.0) to nine and zero-tenths (9.0) and shall not change more than one and zero-tenths (1.0) pH unit within this range over a period of twenty-four (24) hours.

(2) Secondary contact recreation water. The following criteria shall apply to waters designated for secondary contact recreation use during the entire year:

(a) Fecal coliform content shall not exceed 1000 colonies per 100 ml as a monthly geometric mean based on not less than five (5) samples per month; nor exceed 2000 colonies per 100 ml in twenty (20) percent or more of all samples taken during the month.

(b) pH shall be between six and zero-tenths (6.0) to nine and zero-tenths (9.0) and shall not change more than one and zero-tenths (1.0) pH unit within this range over a period of twenty-four (24) hours.

**Section 7. Outstanding State Resource Waters.** This designation category includes certain unique waters of the Commonwealth.

(1) Water for inclusion.

(a) Automatic inclusion. The following surface waters shall automatically be included in this category:

1. Waters designated under the Kentucky Wild Rivers Act, KRS 146.200 - 146.360;
2. Waters designated under the Federal Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq.;
3. Waters identified under the Kentucky Nature Preserves Act, KRS 146.410 - 146.530, which are contained within a formally dedicated nature preserve or are published in the registry of natural areas in accordance with 400 KAR 2:080 and concurred upon by the cabinet; and
4. Waters that support federally recognized endangered or threatened species under the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq.

(b) Permissible consideration. Other surface waters may be included in this category as determined by the cabinet if:

1. The surface waters flow through or are bounded by state or federal forest land, or are of exceptional aesthetic or ecological value or are within the boundaries of national, state, or local government parks, or are a part of a unique geological or historical area recognized by state or federal designation; or

2. The surface water is a component part of an undisturbed or relatively undisturbed watershed that can provide basic scientific data and possess outstanding water quality characteristics; or fulfill two (2) of the following criteria:

- a. Support a diverse or unique native aquatic flora or fauna;
- b. Possess physical or chemical characteristics that provide an unusual and uncommon aquatic habitat; or
- c. Provide a unique aquatic environment within a physiographic region.

(2) Outstanding state resource waters protection. The designation of certain waters as outstanding state resource waters shall fairly and fully reflect those aspects of the waters for which the designation is proposed. The cabinet shall determine water quality criteria for these waters as follows:

(a) At a minimum, the criteria of Section 2 of this administrative regulation and the appropriate criteria associated with the stream use designation assignments in 401 KAR 5:026, shall be applicable to these waters.

(b) If the values identified for an outstanding state resource water are dependent upon or related to instream water quality, the cabinet shall review existing water quality criteria and determine if additional criteria or more stringent criteria are necessary for protection, and evaluate the need for the development of additional data upon which to base the determination. Existing water quality and habitat shall be maintained and protected in those waters designated as outstanding state resource waters that support federally threatened and endangered species of aquatic organisms, unless it can be demonstrated to the satisfaction of the cabinet, that lowering of water quality or a habitat modification will not have a harmful effect on the threatened or endangered species which the water supports.

(c) Adoption of more protective criteria in accordance with this section shall be listed with the respective stream segment in 401 KAR 5:026.

(3) Determination of designation.

(a) Any person may present a proposal to designate certain waters under this section. Documentation requirements in support of an outstanding state resource water proposal shall contain those elements outlined in 401 KAR 5:026, Section 3(3)(a) through (h).

(b) The cabinet shall review the proposal and supporting documentation to determine whether the proposed waters qualify as outstanding state resource waters within the criteria established by this administrative regulation. The cabinet shall document the determination to deny or to propose redesignation, and a copy of the decision shall be served upon the petitioner and other interested parties.

(c) After considering all of the pertinent data, a redesignation, if appropriate, shall be made pursuant to 401 KAR 5:026.

**Section 8. Water Quality Criteria for the Main Stem of the Ohio River.** The following criteria apply to the main stem of the Ohio River from its juncture with the Big Sandy River at River Mile 317.1 to its confluence with the Mississippi River, and shall not be exceeded. These waters are subject to all applicable provisions of 401 KAR 5:002, 5:026, 5:029, 5:030, and this administrative regulation.

(1) Dissolved oxygen. Concentrations shall average at least five and zero-tenths (5.0) mg/l per calendar day and shall not be less than four and zero-tenths (4.0) mg/l except during the April 15 - June 15 spawning season when a minimum of five and one-tenth (5.1) mg/l shall be maintained.

(2) Temperature.

(a) Allowable stream temperatures are:

Month/Date	Period Average (°F)	Instantaneous Maximum (°F)
January 1-31	45	50
February 1-29	45	50
March 1-15	51	56
March 16-31	54	59
April 1-15	58	64
April 16-30	64	69

May 1-15	68	73
May 16-31	75	80
June 1-15	80	85
June 16-30	83	87
July 1-31	84	89
August 1-31	84	89
September 1-15	84	87
September 16-30	82	86
October 1-15	77	82
October 16-31	72	77
November 1-30	67	72
December 1-31	52	57

(b) A successful demonstration conducted for thermal discharge limitations under Section 316(a) of the Clean Water Act shall constitute compliance with these temperature criteria.

(3) Maximum allowable instream concentration for specific parameters for the protection of human health are given below. They shall be met at the edge of the assigned mixing zone. Metal concentrations are total recoverable values except hexavalent chromium, which is dissolved.

Parameter	Concentration (mg/l)
Arsenic	.05
Barium	2.0
Chloride	250
Fluoride	2.0
Nitrite+Nitrate Nitrogen	10.0
Nitrite-Nitrogen	1.0
Phenolics	.005
Sulfate	250

(4) To provide protection of warm water aquatic life habitats, the following criteria shall be met at the edge of the assigned mixing zone.

Parameter	Chronic Criteria Concentration ( $\mu\text{g/l}$ )	Acute Criteria Concentration ( $\mu\text{g/l}$ )
Cadmium	$e^{(.7852 (\ln \text{Hard}) - 2.715)}$	$e^{(1.128 (\ln \text{Hard}) - 3.687)}$
Chromium (hexavalent)	11	16
Copper	$e^{(.8545 (\ln \text{Hard}) - 1.702)}$	$e^{(.9422 (\ln \text{Hard}) - 1.700)}$
Cyanide (free)	5.2	22
Lead	$e^{(1.273 (\ln \text{Hard}) - 4.705)}$	$e^{(1.273 (\ln \text{Hard}) - 1.460)}$
Mercury	0.91	1.7
Zinc	$e^{(.8473 (\ln \text{Hard}) + .884)}$	$e^{(.8473 (\ln \text{Hard}) + .884)}$

(5) The net discharge of aldrin, dieldrin, DDT, including DDD and DDE, endrin, toxaphene, benzidine, and PCBs is prohibited.

### **Section 9. Exceptions to Criteria for Specific Surface Waters.**

(1) The cabinet may grant exceptions to the criteria contained in Sections 2, 4, 5, 6, 7, and 8 of this administrative regulation upon demonstration by an applicant that maintenance of applicable water quality criteria is not attainable or scientifically valid but the use designation is still appropriate. This determination shall be made on a case-by-case basis with respect to a specific surface water following an analysis for each area.

(2) The analysis shall show that the water quality criteria cannot be reasonably achieved either on a seasonal or year-round basis due to natural conditions, or site-specific factors differing from the conditions used to derive criteria in Sections 2, 4, 5, 6, 7, and 8 of this administrative regulation. Site-specific criteria shall be developed by the applicant utilizing toxicity tests, indicator organisms, and application factors that are consistent with those outlined in Chapter 3 of "Water Quality Standards Handbook", EPA, 1994, incorporated by reference in Section 11 of this administrative regulation. In addition, an applicant shall supply the documentation listed in 401 KAR 5:026, Section 3.

(3) An exception to criteria listed in Section 2(2) of this administrative regulation for the protection of human health from the consumption of fish tissue may be granted if it can be demonstrated that natural, ephemeral, intermittent or low flow conditions or water levels preclude the year-round support of a fishery, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges.

(4) Before granting an exception to water quality criteria, the cabinet shall ensure that the water quality standards of downstream waters are attained and maintained.

(5) All exceptions to water quality criteria shall be subject to review at least every three (3) years.

(6) Exceptions to water quality criteria shall be adopted as an administrative regulation by listing them with the respective surface water in 401 KAR 5:026.

### **Section 10. Exceptions to Criteria for Individual Dischargers.**

(1) An exception to criteria may be granted to an individual discharger based on a demonstration by the discharger, following the guidelines in "Interim Economic Guidance for Water Quality Standards Workbook", EPA, March 1995, incorporated by reference in Section 11 of this administrative regulation, that KPDES permit compliance with existing instream criteria shall result in substantial and widespread adverse economic and social impacts.

(2) The demonstration shall include an assessment of alternative pollution control strategies and biological assessments that indicated designated uses are being met.

(3) Before granting an exception, the cabinet shall ensure that the water quality standards of downstream waters are attained and maintained.

(4) All exceptions shall be submitted to the cabinet for review at least every three (3) years. Upon review, the discharger shall demonstrate to the cabinet that a reasonable effort has been made to reduce the pollutants in the discharge to levels that would achieve existing applicable water quality criteria.

(5) The highest level of effluent quality that can be economically and technologically achieved shall be ensured while the exception is in effect.

(6) The Kentucky Pollution Discharge Elimination System permitting program shall be the mechanism for the review and public notification of intentions to grant exceptions to criteria.

**Section 11. Incorporation by Reference**

(1) The following material is incorporated by reference:

(a) "Water Quality Standards Handbook-Chapter 3", EPA August 1994, Publication EPA-823-B-94-005a, U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

(b) "Interim Economic Guidance for Water Quality Standards Workbook", EPA March 1995, Publication EPA-823-B-95-002, U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

(2) This material may be inspected, copied, or obtained at the Division of Water, 14 Reilly Road, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m. (5 Ky. R. 829; Am. 6 Ky. R. 344; eff. 12-5-79; 11 Ky. R. 1144; 1384; eff. 4-9-85; 16 Ky. R. 838; 1370; 2666; eff. 5-31-90; 18 Ky. R. 1388; 2331; eff 1-27-92; 26 Ky. R. 1148, eff. 12-8-99.)